The taxonomy and phylogeny of the genus *Polyura* Billberg (Lepidoptera: Nymphalidae)

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Contents

Synopsis

The relationship of *Polyura* to the other Old World Charaxinae is discussed, and a phylogeny of the 26 species is constructed using 38 listed characters, convergences for three characters being postulated. The distribution of the genus is assessed and compared with the constructed phylogeny. A key to the 100 specific

and subspecific taxa is given, together with a taxonomic revision of each species and subspecies, while existing bionomic and early stage information is included as an aid to future workers. One new subspecies is described, 78 lectotypes designated and 21 new synonyms established.

Introduction

The 26 species of the largely Indo-Australian genus *Polyura* Billberg have rarely been dealt with collectively; more usually one or two species have been investigated in isolation. The most notable exception (Rothschild & Jordan, 1898; 1899) dealt comprehensively with the group under the invalid name *Eulepis* Scudder (see p. 126).

Polyura has much in common with the largely Afrotropical genus *Charaxes* Ochsenheimer, and the two have often been considered congeneric, whilst together with *Palla* Hübner and *Euxanthe* Hübner they form the prionopterous (i.e. having the costal edge of the forewing serrate and thickened) Old World section of the Charaxinae. *Charaxes* can be divided into two groups on the basis of the relationship between the number of scale rows and the costal serrations at the centre of the underside of the forewing edge (Rothschild & Jordan, 1898: 552, 553), the apomorphic condition being approximately two scale-rows to each serration, other species having one scale-row to each serration. This latter, plesiomorphic condition is shared by *Polyura*, *Euxanthe* and *Palla*. A synapomorphy having not been found for *Charaxes* as it now stands, it can be seen that *Polyura* is just as likely to be a sister to the more specialized group of *Charaxes* species. However, for reasons outlined below, I believe *Polyura* possesses sufficient specializations to justify its separation from *Charaxes* at the generic level, and it can therefore be shown that *Charaxes* in its present usage is paraphyletic. As can be seen below, I regard *Polyura* as monophyletic, having its sister group within *Charaxes*.

Adults of *Polyura*, like *Charaxes*, are fast-flying butterflies; the males are highly territorial and exhibit patrolling, fighting and hill-topping behaviour. They are attracted to faeces and carrion, while both sexes are attracted to fermenting fruit and exuding plant sap. Where possible, fairly comprehensive behavioural notes have been incorporated into the systematic section, appearing under each subspecies. This is also true for early-stage information and a list of all recorded food plants is included. Bionomic and early-stage information, while not being comprehensive enough to assist much in the present task, is included here to aid and perhaps stimulate future workers to fill in the blanks, which are numerous. Such information may one day help to solve taxonomic problems which no amount of puzzling over dried museum specimens can.

The systematic section also includes a selective synonymy under species and subspecies headings. Under the subheading 'Size' is listed the mean length, in millimetres, of a straight line between the base and apex of the forewing ($\bar{x}$) and the standard deviation of this measurement for the chosen sample (s). Measurements of fewer than six specimens are given in full without mean or standard deviation. Distributions give details of localities for material in the British Museum (Natural History), unless otherwise stated, and give alternative spellings or untraced localities in square brackets. Numbers of specimens studied are to be found following on from the distribution information. Type-material examined is noted under the relevant section giving verbatim quotes from the data labels. In each case the end of a label is marked by an oblique stroke (/).

The following abbreviations for depositories are utilized throughout the sections below.

AM, Sydney	The Australian Museum, Sydney.
BMNH	British Museum (Natural History), London.
MHN, Geneva	Muséum d'Histoire Naturelle, Geneva.
MNHN, Paris	Muséum National d'Histoire Naturelle, Paris.
MNHU, Berlin	Museum für Naturkunde der Humboldt-Universität, Berlin
RNH, Leiden	Rijksmuseum van Natuurlijke Historie, Leiden.
UM, Oxford	University Museum, Oxford.
ZSBS, Munich	Zoologische Sammlung des Bayerischen Staates, Munich.

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I would like to thank my colleagues at the British Museum (Natural History) for their support and comments, particularly Mr R. I. Vane-Wright, Mr P. R. Ackery, Mr J. Huxley, Dr R. W. Crosskey, and Mr A. C. Pont. In addition Dr J. D. Holloway, (Commonwealth Institute of Entomology), provided valuable advice. I would also like to thank my many friends and correspondents who assisted, in particular Mr R. A. Carver (Papua New Guinea); Dr I. F. B. Common for his help while I was studying the C.S.I.R.O. collections in Canberra; the Curator of the Hope Entomological Collections, University Museums, Oxford; Mr B. D'Abrera (Melbourne) for his information on behaviour and early stages; Dr R. de Jong, Rijksmuseum van Natuurlijke Historie, Leiden, for the loan of type-specimens; Messrs G. Dennis and B. Macfarlane (Honiara) for their help while in the Solomon Islands; Mr J. Plantrou (La Celle St Cloud, near Paris) for transparencies of *P. athamas* from Sulawesi; Fr A. Sacco (Vanuatu) for his information on *P. sacco*; Mr C. G. Treadaway (Frankfurt); and Dr P. Viette, Muséum National d'Histoire Naturelle, Paris. I would similarly like to thank the Photographic Unit, British Museum (Natural History), for the photographs reproduced in this paper.

Phylogeny

It has not been possible to produce a complete, strictly dichotomous tree for *Polyura* due to limitations imposed by the lack of data in many areas. In particular the lack of bionomic and early-stage information has meant that the study has had to be restricted to those characters readily observed on dead imagines. The published cladogram is, then, the best which I could achieve with the available information, and I hope that the areas which remain unresolved may stimulate future workers to complete the picture.

For a list of definitions of the terms referred to in this discussion see Vane-Wright (1979: 43).

Characters

A study based on the proposals put forward by Hennig (1966) must have as its starting point some reference group for the organisms under consideration, and this reference group should be the sister-group of the species in question; only by examining the characters under consideration in both groups can decisions be reached as to the relative degree of specialization in each character state.

In the present study it was clear from the beginning that the sister-group of *Polyura* would be found within *Charaxes*, for *Polyura* and *Charaxes* together form a monophyletic group. However, as is noted above, *Charaxes* is not monophyletic, but the sister-group of *Polyura* is likely to be within that group of *Charaxes* having one scale row to each serration on the costal edge (Leptodontiae, Poulton, 1926: 572), and this includes the species numbered from 56 to 119 in van Someren's synoptic list (1975: 114–117), and all species of Oriental *Charaxes*.

A survey of possible characters was made including an examination of the male and female genitalia, but these were found to be of little assistance. The male genital armature of *P. gilolensis* is illustrated (Fig. 1), and the majority of species depart little from this. There are differences, but also a great deal of intraspecific variation which is not dependent on geographical distribution. For example, the uncus may be simple or slightly bifid in two males of the same species from the same locality. Many slight differences in morphology are of this sort, others are often not sufficient to be able to satisfactorily discover apomorphies. Likewise the female genitalia show little that can usefully be utilized. A study of the venation again revealed little, but pattern, particularly that of the underside, was found to be very useful, and comparison was made utilizing the Nymphalid ground plan of Schwanwitsch (1924: pl. 1, fig. 1) in order to assist in establishing homologies. This figure is also reproduced by Vane-Wright & Huggins (1972: fig. 17) and Vane-Wright (1979: fig 27). Fig. 2 shows the wing pattern of the underside of *Polyura epigenes* with the pattern elements labelled according to Schwanwitsch.

Recently it has been common to refer to these pattern elements in the following manner, E^1 for the first externalis, M^1 for the first medialis etc., whereas Schwanwitsch originally referred to

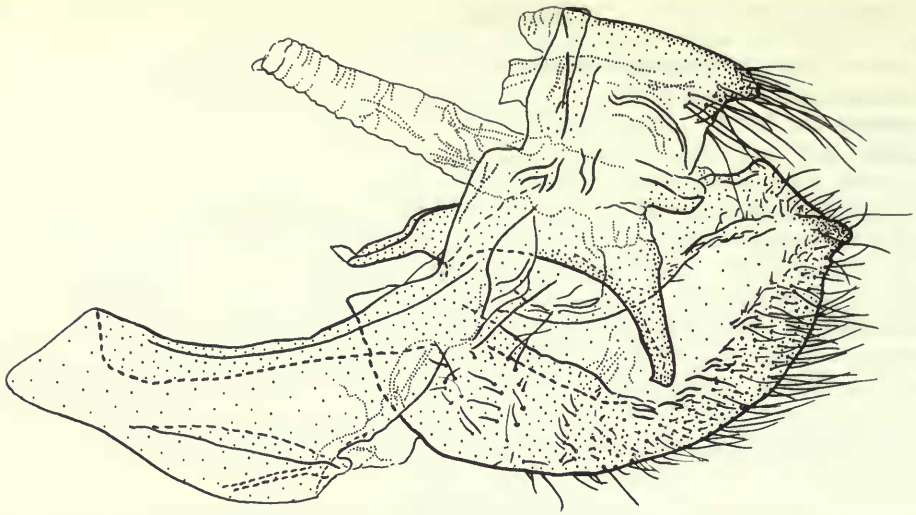

Fig. 1 *Polyura gilolensis gilolensis* (Butler), ♂ genitalia, lateral view, aedeagus and right valve removed.

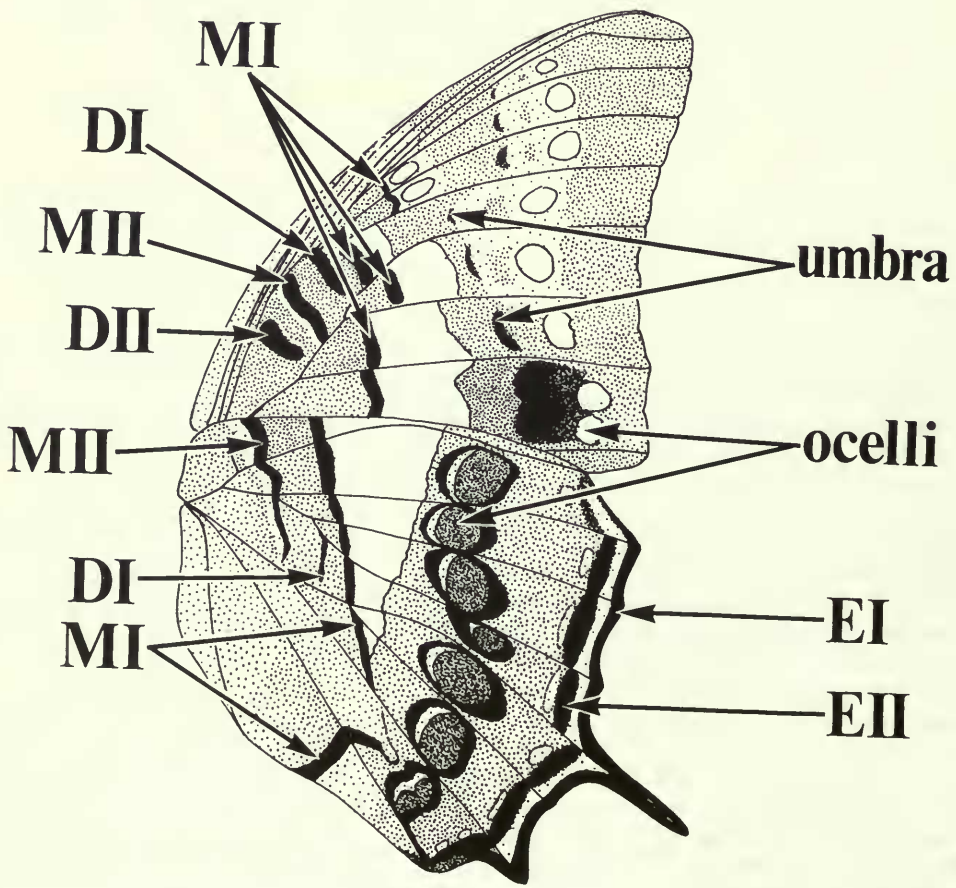

Fig. 2 *Polyura epigenes* (Godman & Salvin) ♀; pattern of underside with pattern elements labelled according to Schwanwitsch (1924).

them as EI, MI etc. changing, for no reason which has been disclosed, to this later method. I have decided here to revert to the original notation in order to avoid confusion with the abbreviations for veins e.g. M_1, M_2, R_5 etc.

Polyura is accepted here as a monophyletic group and is separable from *Charaxes*, which contains the presumed sister-group of *Polyura*, on the basis of two characters.

A. All species of *Polyura* show a reduction in the number of pattern elements present in *Charaxes*. The basal element (B) is present in *Charaxes*, but is lost in all species of *Polyura* (the apomorphic condition). In addition, all species of *Polyura* show at least a reduction in the extent of DII in the hindwing. Indeed, only one species exhibits it at all, and this is the 'primitive' *P. gamma*.

B. All species of *Charaxes* have the hindwing cell closed by a non-tubular vein, and although this vein is small it is always present. *Polyura* species have the hindwing cell completely open, and I consider this character state to be apomorphic.

Below is a list of 38 characters which have been used in the construction of the cladogram. The presumed apomorphic state for each is indicated throughout by the first sentence of each section. In addition, a brief note gives a reason for ascribing this polarity.

1. First eight segments of the antennal club yellow. In the great majority of *Polyura* species, and in *Charaxes*, no more than the first four antennal club segments are light coloured in contrast to the rest of the antenna.

2. MI in cell Cu_{1a} of the hindwing underside parallel with Cu_{1b} or forming a small angle with it. Specimens of *Charaxes* generally have this section of MI either straight and forming a large angle or a right-angle with Cu_{1b}, or are sigmoid, with the section nearest vein Cu_{1b} in this cell at right-angles to it. *Polyura gamma* has this line more or less at right-angles to Cu_{1b}, whilst all other species, with the exception of *P. delphis*, have MI parallel or at a small angle. In *P. delphis* this line is often obliterated entirely, but when present it is often curved to form a semicircle; this is not surprising, considering the propensity for other portions of MI and MII to join to become circles in this species.

3. DII absent on the hindwing underside. *P. gamma* is the only *Polyura* species to retain DII in the hindwing. All species of *Charaxes* show DII in this region.

4. Hindwing underside with MII not extended into cell 2A. In all species of *Polyura* except *P. gamma*, the above holds true, but in *P. gamma*, and even more so in *Charaxes*, MII curves to enter cell 2A.

5. Strongly sexually dimorphic. Although many species of *Charaxes* are sexually dimorphic, this is not normally true of the section of the genus which is considered most likely, on present evidence, to be the sister-group of *Polyura*. Only one species of *Polyura*—*P. epigenes*—is strongly sexually dimorphic, and this character is therefore considered autapomorphic for that species.

6. Male genital valves each bearing two heavily sclerotized hooks. The common condition for species of *Charaxes* and *Polyura* is for the valve to bear only one, posterior, sclerotized hook.

7. Postdiscal spots of the hindwing underside forming a complete series, all elements being round and distinct, and surrounded by black. In the great majority of *Polyura* species these ocelli are either radically different (i.e. chevron-shaped or otherwise modified in the *eudamippus*- or *athamas*-groups) or are atrophied or missing in part. Only two species have a complete row of distinct, uniformly coloured, rounded ocelli on the underside. Of these, *P. gilolensis* differs in that each ocellus is not surrounded by black, but as is the case in the rest of the *pyrrhus*-group to which it belongs, it has a continuous black line proximally bordering the ocelli. This leaves *P. epigenes* as the only species satisfying in all details the criteria for the character state indicated above. It is possible that this could be regarded as an apomorphic transformation series between *P. epigenes* and *gilolensis*, but in any case it can be regarded as apomorphic, and is therefore a presumed reversion to the nymphalid ground plan (see above), for if this were not the case, then character states 8 and 13 would have to have arisen twice, and character state 10 would have to have arisen three times.

8. The anal veins (2A and 3A) of the hindwing underside overlayed with black scales, to form

two distinct black lines. This character state is present only in nine species of *Polyura*, and in no other Charaxine.

9. Rufous postdiscal ocelli are present on the hindwing upperside. In species of *Charaxes* and all but one of the species of *Polyura* postdiscal ocelli do not appear on the upperside of the hindwing.

10. DI on the hindwing underside fused with MI, or absent. In *Charaxes* DI is always present as a black line at the end of the discal cell of the hindwing.

11. MI on the hindwing underside forms a gentle curve to end on the anal margin. In *Charaxes* and in all species of *Polyura* except *P. clitarchus*, MI, where continuous, is irregular and zig-zagged.

12. MI absent from cell Cu_{1a}, but present in cell Cu_{1b} on forewing upperside. In most species of *Polyura* and *Charaxes* MI is present in both cells. In some species of *Polyura* it is present in cell Cu_{1a} and absent from cell Cu_{1b}, or absent from both cells, but this is not constant intraspecifically. One species of *Polyura*, *P. clitarchus*, constantly exhibits the character state described, for which it can be regarded as an autapomorphy.

13. Underside with MI, MII, DI and DII of both wings, and the black lines on the anal veins of the hindwing extremely thick. The normal condition for species of *Charaxes* and *Polyura* is to have these pattern elements quite narrow, usually not more than 0·5 mm thick. In the thickened state, regarded as apomorphic, the black lines on the anal veins are 1·5 to 2·0 mm wide, whilst DII on the forewing may be up to 4·0 mm thick.

14. The hindwing underside with postdiscal ocelli complete, not obliterated or reduced in cells R_1 to M_2, the umbra forming a continuous black line proximal to the ocelli. Species of *Charaxes* normally have the postdiscal ocelli of the underside suppressed, whilst most species of *Polyura* show some reduction in cells R_5 and M_1, and often in cells R_1 and M_2. In the *eudamippus*- and *athamas*-groups, where there is little or no reduction of the ocelli in these cells, they are radically different in shape and structure. Only two species have a complete row of distinct, rounded postdiscal ocelli on the underside: one of these, *P. epigenes* having each ocellus completely surrounded by a black line, and the other, *P. gilolensis* conforming to the presumed apomorphic character state, which is therefore a presumed reversion to the nymphalid ground plan (see character 7).

15. Forewing underside with DII in the discal cell reduced to one or more spots, or absent. In *P. gamma*, *epigenes*, the *pyrrhus*-group, *cognata* and *dehanii*, DII forms a strong bar in the discal cell, the presumed plesiomorphic condition, whilst in the species of *Charaxes* which form the presumed sister-group of *Polyura*, DII forms a thin line, and although this may be suppressed or interrupted in part, it does not form rounded spots.

16. MI and MII of underside fused to form circles in cells Cu_{1a} of the forewing, and on the hindwing costal margin. This character state is unique to *P. dolon*, not being found in *Charaxes* or in other *Polyura*, and can therefore be considered an autapomorphy of this species.

17. Postdiscal ocelli of the hindwing underside yellow in cells R_1 to M_2, and red thereafter. As in 16, this character state is unique to *P. dolon*, not being found in *Charaxes* or in other species of *Polyura*, and is therefore considered autapomorphic.

18. Forewing underside with very well-defined bands of like colour on the outer margin and postdiscally, proximally bordering the umbra. Most species of *Polyura* and species of *Charaxes* have no clearly defined bands at either of these sites, and certainly no band which corresponds with that on the outer margin.

19. Forewing underside with a well defined 'Y'-shape formed from MI, MII and DI, and the brown bands which these elements contain. The 'tail' of the 'Y' runs from cell Cu_{1b} to cell M_3, one 'arm' continuing along the end of the discal cell, and the other along vein M_3. This character state is found only in the *eudamippus*-group, and can therefore be considered apomorphic. Two species of this group linked with other members of the group by characters 21, 22, 25 and 26—*P. nepenthes* and *dolon*—do not have the second arm produced along vein M_3. On the grounds of parsimony this is regarded as a secondary loss (see character 26).

20. Underside of the hindwing possessing a costal band. Species of *Charaxes* and all species of *Polyura* except *P. posidonius* have no costal bar on the hindwing.

21. Forewing underside with MII split to form many small black spots in the discal cell. In *Charaxes* and in all but one species of *Polyura*, *P. posidonius*, MII is present as a black bar.

22. Underside of forewing with a brown costal band. Species of *Charaxes* and most species of *Polyura* are without a costal band on the forewing.

23. Postdiscal ocelli of the hindwing underside forming rufous lunules posteriorly, but anteriorly becoming a continuous bar. *Charaxes* and all species of *Polyura* except *P. narcaea* do not exhibit this character state.

24. Forewing upperside with a complete row of postdiscal and submarginal spots. In the majority of species of *Polyura* which have a series of postdiscal spots on the forewing upperside there is no similar submarginal series of spots. In the *eudamippus*-group, however, this does occur and this character state is considered synapomorphic for this group.

25. Hindwing underside with a complete series of postdiscal ocelli forming well-delineated chevrons, normally partly blue-centered, often yellow, and overlying a yellow band. This character state is unique to three species of *Polyura* and is not found in any species of *Charaxes*.

26. Oblique stroke of the 'Y' which would run along vein M_3 of the forewing underside lost (see character 19). If this is regarded as a secondary loss then it can be considered to be an apomorphic character state.

27. MI, MII and DI (which form the reduced 'Y'-pattern mentioned in characters 19 and 26) thickened and interrupted at the veins. This character state is unique to *P. nepenthes*, and is absent from species of *Charaxes*.

28. MI is absent from cells 2A and 3A of the hindwing underside. In species of *Charaxes* and in all *Polyura* species except *P. dolon*, MI is present, lying across vein 2A of the hindwing underside.

29. Underside with areas of dark grey-green or grey-brown pigment. These occur as one area on the outer margin and submargin of the forewing (becoming more diffuse proximally), and a second area on the hindwing between the postdiscal ocelli, reaching almost as far as the externae, with a pale area underlying the postdiscal ocellus in cell R_5, and often, to a lesser extent, in cell M_1. The majority of species of *Polyura* and all the species of *Charaxes* lack these markings.

30. Hindwing underside with the postdiscal ocelli in cells R_5 and M_1 completely obliterated, except for a white patch in cell R_5. This character state is found in only two species of *Polyura* and never in *Charaxes*.

31. Hindwing tails strongly curved. Only *P. dehanii* possesses this character state, unique amongst the Charaxinae.

32. Forewing underside with a black costal band, running along the costal vein from the base to MI just beyond the end of the discal cell. This is found only in *P. cognata* and differs from the brown costal band of *P. narcaea*, *eudamippus* and *dolon* in colour, structure and extent, and so is probably not homologous. Other species lack such a band.

33. Submarginal ocelli of the forewing underside forming strongly delineated chevrons. This character state is unique to the *athamas*-group and is not present in other species of *Polyura* or *Charaxes*.

34. Postdiscal ocelli of the hindwing underside present in each cell, forming red lunules, delineated distally with black. This character state is unique to the *athamas*-group, and is not present in species of *Charaxes* or in other species of *Polyura*. In *P. posidonius* the ocelli appear superficially similar, but are not delineated with black distally, and are more 'ragged'.

35. MI and MII of the underside displaced basally. *P. arja*, *athamas*, *agraria*, *hebe*, *moori* and *jalysus* have MI and MII of the underside displaced basally relative to other species of *Polyura*, and to one another. The displacement of these pattern elements can be regarded as a transformation series.

36. Wing shape very elongate. Only *P. agraria* has the shape of the wings much more elongate than in any other species of *Polyura* or *Charaxes*.

37. Postdiscal ocelli of the hindwing underside present in each cell, forming red lunules delineated distally with black, and arranged in a gentle curve. This is true of *P. jalysus*, but in other species of *Polyura* the postdiscal ocelli of the underside are normally displaced proximally from cells R_1 to M_2. This is the only species where this occurs in the *athamas*-group, and

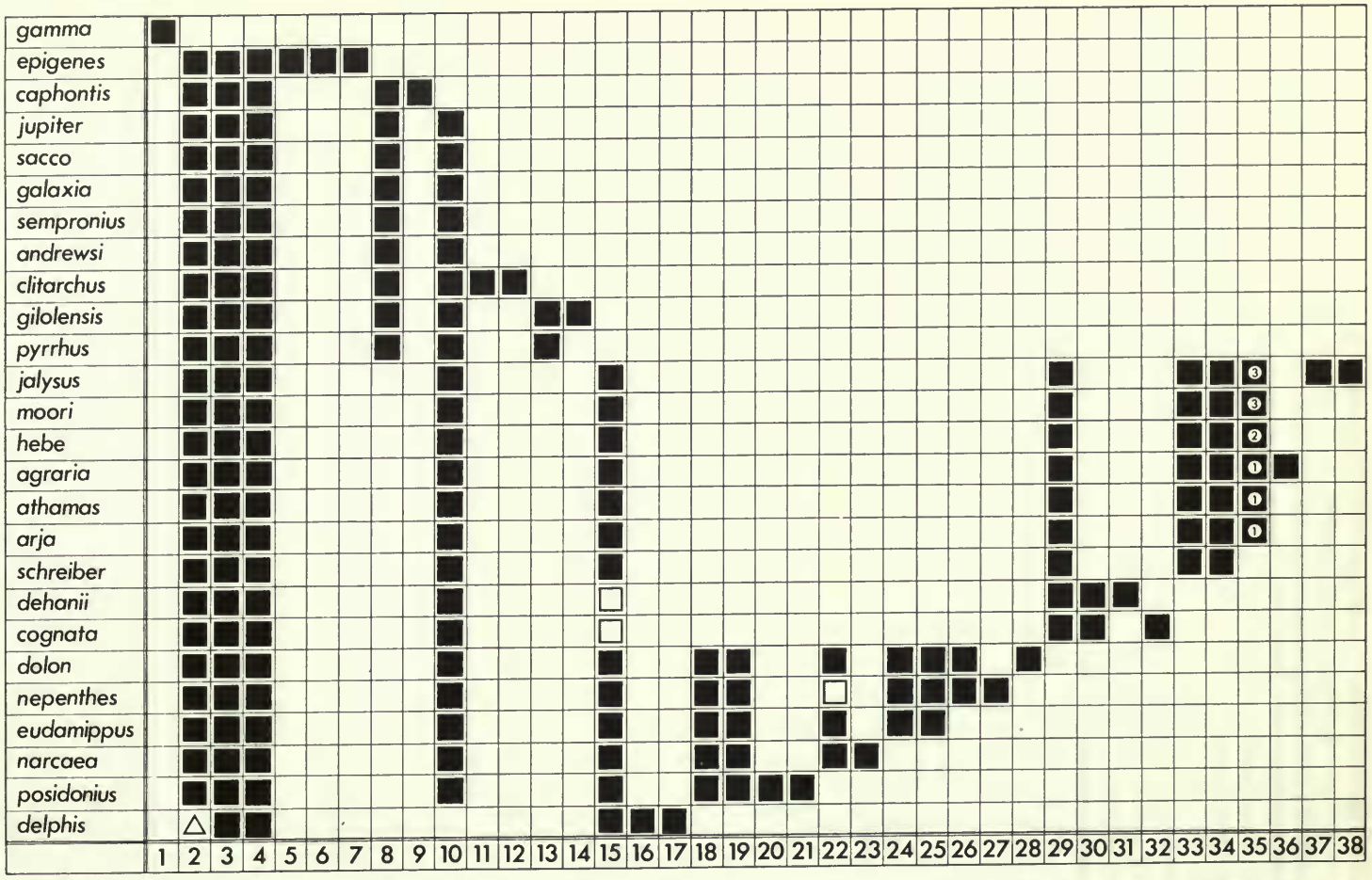

Fig. 3 Character matrix for the species of *Polyura*. The numbers along the bottom row refer to characters which are fully discussed in the text. Black squares indicate apomorphies, numbered black squares indicate apomorphic transformation series, white squares indicate probable secondary loss, and the triangle indicates an alternative character state whose relationship with other character states remains unclear (see under character 2 in the text).

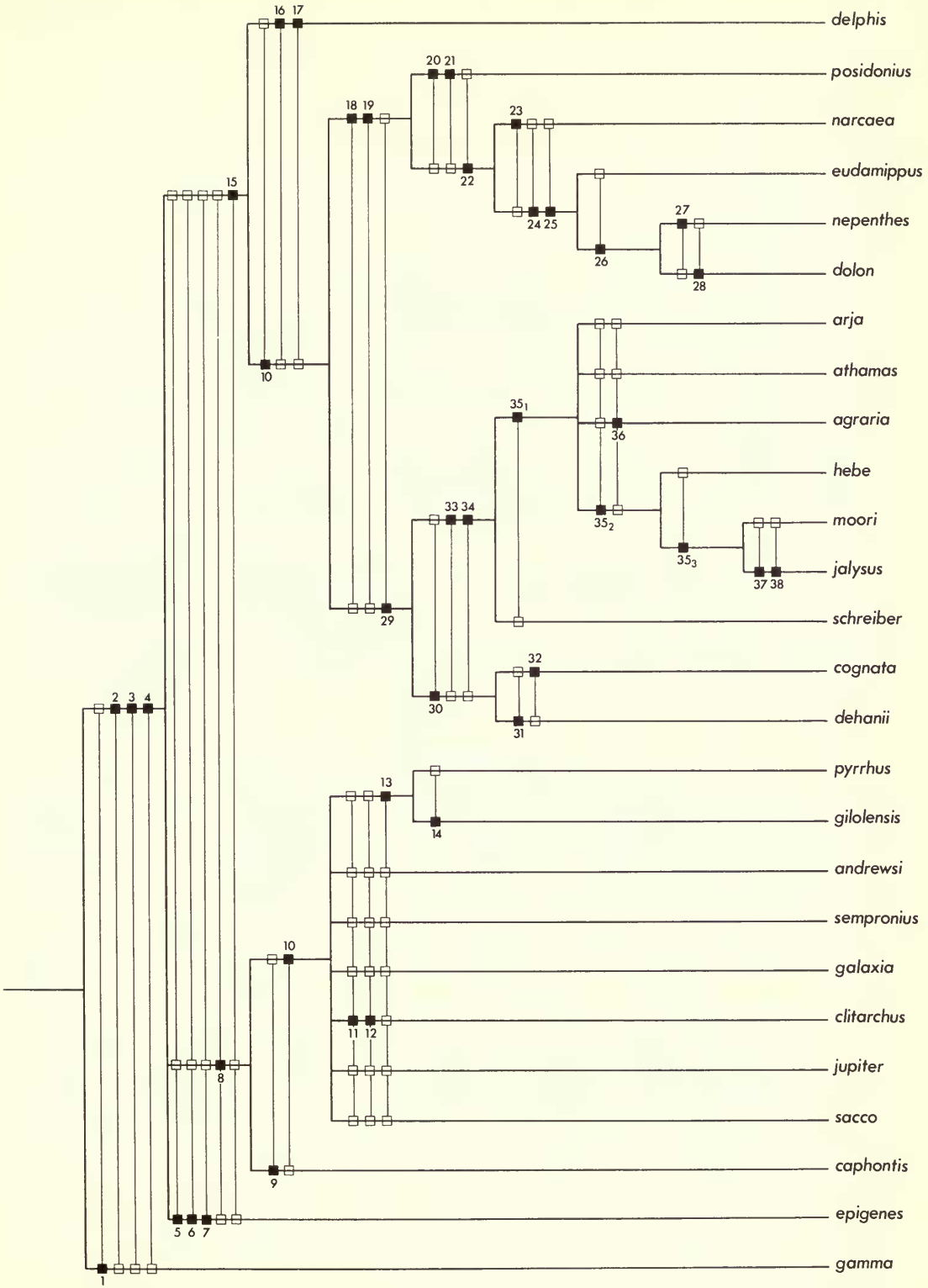

Fig. 4 Cladogram derived from the character matrix for the species of *Polyura*. Numbered black squares indicate apomorphies, and white squares the plesiomorphic condition for each character.

although a similar alignment of ocelli may occur in the *eudamippus*-group, in this case they are of radically different structure (see character 34).

38. Forewing underside with DII absent. Only *P. jalysus* has lost DII in this region, other species of *Polyura* and *Charaxes* possessing it.

Derivation of cladogram

In any analysis of a group of butterflies of the size of *Polyura* there are likely to be convergences which produce inconsistencies in the character matrix (Fig. 3). The problem is to construct the most likely cladogram from the available evidence. The following are apparent convergences unveiled by an examination of the character matrix.

If character 10 is accepted as it stands, it proves inconsistent with characters 8 and 15. However, characters 8 and 15 can be accommodated if character 10 is assumed, on the grounds of parsimony, to have arisen twice as indicated on the cladogram. Likewise, if character 15 is accepted without question, it proves inconsistent with characters 10 and 29, but if on the grounds of parsimony *P. dehanii* and *cognata* are assumed to have secondary loss of character15, characters 10 and 29 can be accommodated. Character 22 is apparantly synapomorphic for *P. dolon*, *eudamippus* and *narcaea*. However, this proves inconsistent with characters 24, 25 and 26, and on the grounds of parsimony, secondary loss of character 22 can be assumed for *P. nepenthes*.

Unfortunately I have been unable to resolve adequately the *pyrrhus*-group, *P. arja*, *athamas* and *agraria*, or *P. epigenes*, and I have been unable to find autapomorphies for many species in the *pyrrhus*- or *athamas*-groups, although all but *P. agraria* are readily separable (see the systematic section).

In this paper I have chosen to recognize three species-groups, which are: the *pyrrhus*-group, being all those butterflies possessing character 8, i.e., *P. pyrrhus*, *gilolensis*, *andrewsi*, *sempronius*, *galaxia*, *clitarchus*, *jupiter*, *sacco* and *caphontis*; the *athamas*-group, being all those species possessing characters 33 and 34, i.e., *P. athamas*, *arja*, *agraria*, *hebe*, *moori*, *jalysus*, and *schreiber*; the *eudamippus*-group, being all those species possessing characters 18 and 19, i.e., *P. eudamippus*, *posidonius*, *narcaea*, *nepenthes* and *dolon*.

Distribution

Fig. 5 is a matrix listing species in the phyletic order chosen for the character matrix against selected key localities arranged in geographical sequence. The arrangement of these localities is largely a compromise, there being no adequate method of listing linearly, in spatial terms, localities within such a vast area as the Asian and Australian regions. Nevertheless, it is still possible to list localities with some regard to their geographical sequence, and this is attempted here.

As can be seen, there is a grouping roughly following a downward sloping diagonal line in the figure, which indicates that evidence from distribution supports the phyletic sequence of species chosen.

P. andrewsi from Christmas Island falls outside the general grouping. Christmas Island is geographically nearer to Java and the *athamas*-group, whereas the obvious affinities of *P. andrewsi* lie with the Australasian *pyrrhus*-group. It is also part of the Australian, rather than the South-East Asian plate and, when *P. andrewsi* reached it, was likely to have been closer to Australia than to Java, or the volcanic Lesser Sunda Islands, which are of relatively recent origin, and were then probably much smaller than they are today. Indeed, the probability that species have dispersed from Australia to Christmas Island becomes more likely the earlier that this dispersion is suspected as having taken place.

Euploea core corrina occurs in both Christmas Island and Australia whilst a separate subspecies—*E. core mazares*—occurs on Java (Ackery & Vane-Wright, in prep.). Also a number of butterfly species from the Cocos Islands have affinities with Australian species rather than species from the Sunda Islands (J. D. Holloway, pers. comm.).

When more is known about the geological history of the region, and about the biology and

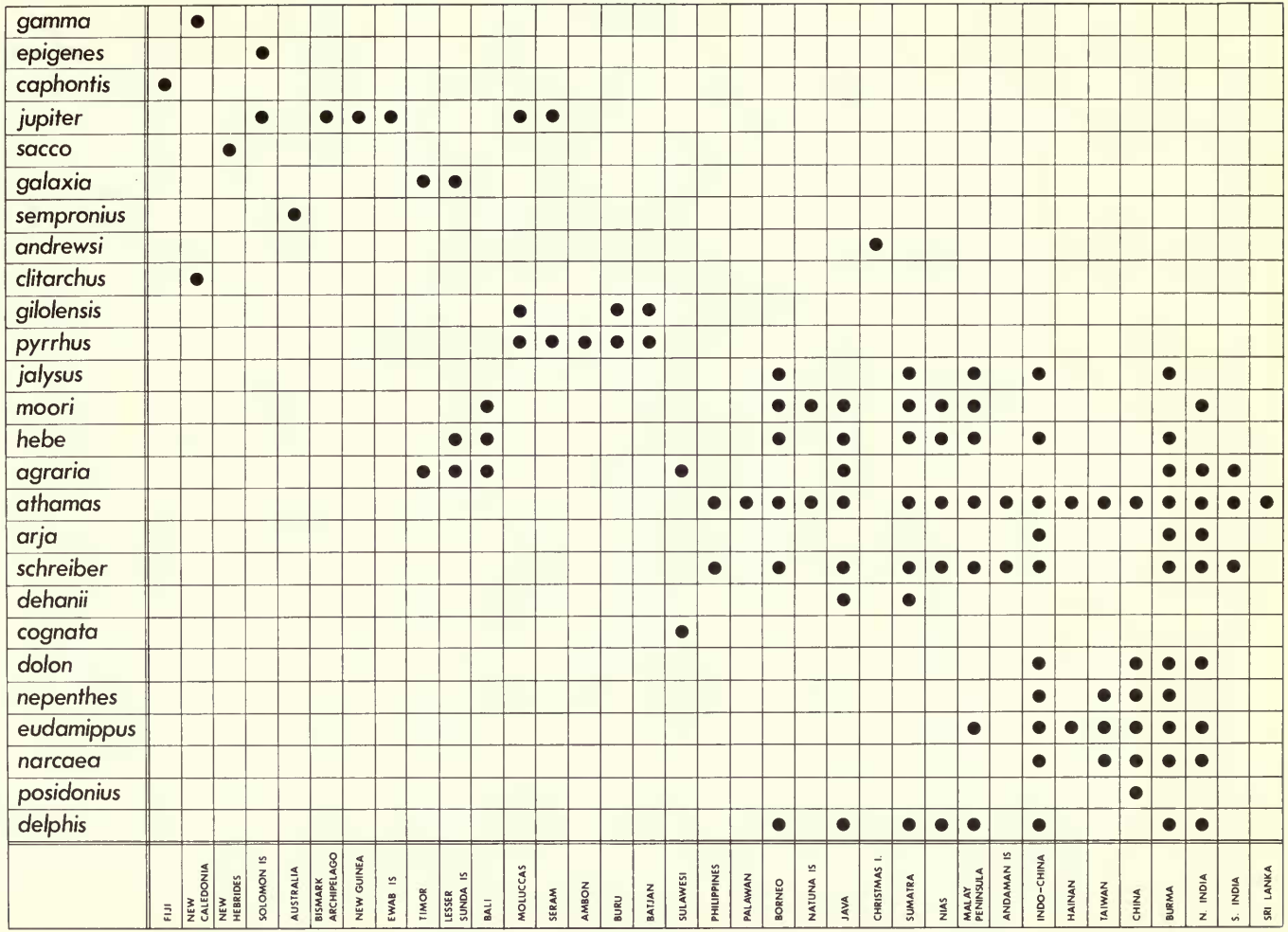

Fig. 5 Chart showing distribution of species of *Polyura*; the black spots indicate the presence of a species.

behaviour of the species concerned, then it may one day be possible to put a minimum date on the arrival of *P. andrewsi* on Christmas Island, and from this a minimum date for the split between the Australasian and the Asian species of *Polyura*.

Systematics

POLYURA Billberg

Polyura Billberg, 1820: 79. Type-species: *Papilio pyrrhus* Linnaeus, by subsequent designation (Scudder, 1875: 255).

Eulepis Scudder, 1875: 170. Type-species: *Papilio athamas* Drury, by original designation. [Junior homonym of *Eulepis* Billberg (1820: 80).]

Murwareda Moore, [1896]: 263. Type-species: *Charaxes dolon* Westwood, by original designation.

Pareriboea Roepke, 1938: 346. Type-species: *Papilio athamas* Drury, by subsequent designation (Hemming, 1964: 126). [Invalid under Article 13b of the ICZN code, 1964.]

The generic nomenclature of the butterflies now contained in the genus *Polyura* was confused for many years. *Eulepis* was utilized by, among others, Rothschild & Jordan in the most definitive work on the genus to date, and *Eriboea* Hübner (a synonym of *Charaxes*) has been used by several other authors, including Fruhstorfer (1914). The situation was much clarified by Hemming (1934: 95) and a fuller account by him (Hemming, 1967: 167, 176) is briefly summarised below.

Eulepis Scudder is a junior homonym of *Eulepis* Billberg, an unrequired replacement name for the Riodinid genus *Nymphidium* Fabricius. When introducing *Eulepis*, Billberg included the name *athamas*, a manuscript name and therefore unavailable for citation as a type-species. Scudder mistakenly took this to be *Papilio athamas* Drury, and thus *Eulepis* to be a Charaxine genus.

Röber ([1909]: 169) realized Scudder's mistake and picked *Eriboea* as an alternative to *Eulepis* Scudder. He advanced the erroneous argument that *Papilio athamas* Drury was the type-species of *Eriboea*, whereas the true type-species is *Papilio etheocles* Cramer (by selection of Scudder, 1875: 166), a taxon currently referred to *Charaxes*.

The butterflies of the genus *Polyura* are closely allied with those of *Charaxes* but possess a non-tubular vein at the end of the hindwing discal cell, and have the number of pattern elements present on both sets of wings reduced, B being absent, and DII either absent or reduced.

RANGE. From India extending throughout South East Asia and China, through the Indonesian Islands, New Guinea and the Solomons to the Philippines, New Caledonia, Vanuatu, Fiji and Australia.

Key to species and subspecies

1	DI in hindwing underside at distal end of discal cell	2
–	DI in hindwing underside absent or fused with MI	11
2(1)	Postdiscal ocelli in hindwing underside complete. Strongly sexually dimorphic. Valve with two strongly sclerotized hooks	3
–	Cells R_5, M_1, and sometimes R_1 and M_2 of hindwing underside with postdiscal spots atrophied or of different colour (except *gilolensis*) to postdiscal spots in remaining cells. No strong sexual dimorphism. Valve with one strongly sclerotized hook	4
3(2)	Male forewing upperside with yellow discal spot.	***epigenes epigenes*** (Godman & Salvin) (p. 134)
–	Male forewing upperside without discal spots	***epigenes monochroma*** (Niepelt) (p. 135)
4(2)	MI in cell Cu_{1a} of hindwing underside parallel with Cu_{1b} or forming small angle with it	5
–	MI in cell Cu_{1a} of hindwing underside absent or forming an arc meeting Cu_{1b} at a large angle	
5(4)	Upperside with yellow discal bands very narrow	***caphontis caphontis*** (Hewitson) (p. 135)
–	Upperside with yellow discal bands broad	***caphontis nambavatua*** subsp. n. (p. 136)
6(4)	Hindwing outer margin strongly dentate. Upperside ground colour yellow with black apices to the forewings. Underside with MI and MII joined to form circular spots in several cells, all of which are centered with blue. No more than the first four antennal segments yellow. Uncus slightly produced posteriorly	7

– Hindwing outer margin slightly dentate. Upperside ground colour black-brown with yellow bands and spots. First eight antennal segments yellow. Uncus very blunt ***gamma*** (Lathy) (p. 133)

7(6) Forewing upperside with disco-basal patch normally extending as far towards the apex in cell M_1 as in cell M_2 8

– Forewing upperside with disco-basal patch extending much further towards the apex in cell M_2 than in cell M_1 9

8(7) Disco-basal patch in cell M_1 of the forewing upperside normally containing a black blotch. Hindwing underside often with round spot in cell R_1. India, Bangladesh, Burma and Thailand . . . . . ***delphis delphis*** (Doubleday) (p. 190)

– Black apex in forewing upperside very restricted. Disco-basal patch in cell M_1 normally without a black blotch. Hindwing underside without a round spot in cell R_1. Palawan . . . . . ***delphis nivea*** (Rothschild) (p. 192)

9(7) Subapical white spot of forewing upperside normally absent or occasionally reduced. Malaya, Singapore, Sumatra and Borneo ***delphis concha*** (Snellen van Vollenhoven) (p. 191)

– Subapical white spot of forewing upperside normally clearly defined 10

10(9) Submarginal blue-grey lunules of hindwing upperside lacking any white pupil. Nias ***delphis othonis*** (Fruhstorfer) (p. 191)

– Submarginal blue-grey lunules of hindwing upperside with a white pupil ***delphis cygnus*** (Rothschild) (p. 192)

11(1) Underside forewing with DII in discal cell a thick bar 12

– Underside forewing with DII reduced to one or more spots or absent 39

12(11) Cells R_5 and M_1 of hindwing underside with postdiscal spots absent, but replaced by a white spot in cell R_5. Hindwing anal veins not covered by black lines beneath 13

– Cells R_5 and M_1 of hindwing underside with postdiscal spots present. Hindwing anal veins black beneath 15

13(12) Hindwing tails straight or barely curved. Wings above black with well-defined bands and spots. Postdiscal band bordered by structural blue scales above. Hindwing underside with postdiscal spots crimson. Uncus slightly bifid . . ***cognata*** (Snellen van Vollenhoven) (p. 157)

– Hindwing with curved 'pincer'-like tails. Wings black with diffuse yellow-white band above. Hindwing underside with maroon postdiscal spots. Uncus very square 14

14(13) Forewing underside with postdiscal spots strongly marked in each cell from the costal margin to cell Cu_{1b} . . . . . ***dehanii dehanii*** (Westwood) (p. 156)

– Forewing underside with postdiscal spots strongly marked from cells R_4 to M_3, very faint in cells Cu_{1a} and Cu_{1b} . . . . . ***dehanii sulthan*** (Hagen) (p. 156)

15(12) Forewing upperside with white or yellow-white discal band clearly defined and not extending to wing base 16

– Forewing upperside with white or yellow-white discal band with diffuse margins, often forming a patch, diffuse scaling extending into wing base 22

16(15) Hindwing upperside with submarginal spots yellow, semi-lunar and well defined. Admarginals red-orange . . . . . ***sacco*** Smart (p. 140)

– Hindwing upperside with submarginal spots white or blue and sometimes ill-defined. Admarginals generally restricted and blue 17

17(16) Hindwing upperside with glaucous scaling distal to discal band connecting with admarginals at tornus, and normally at vein Cu_{1b} 18

– Hindwing upperside with glaucous scaling on distal edge of discal band not normally joined to admarginals 19

18(17) Forewing upperside with pronounced glaucous scaling distal to discal band ***jupiter glauca*** (Joicey & Talbot) (p. 143)

– Forewing upperside with discal band without associated glaucous scaling distally 20

19(17) Upperside with discal bands dark yellow . . . . ***jupiter keiana*** (Rothschild) (p. 144)

– Upperside with discal bands pale yellow or cream 21

20(18) Discal spot in cell M_2 of forewing upperside extremely small—less than quarter the size of that in cell M_3 . . . . . ***jupiter jupiter*** (Butler) (p. 142)

– Discal spot in cell M_2 of forewing upperside only half the size of that in cell M_3 ***jupiter watubela*** (Rothschild) (p. 144)

21(19) Underside with forewing ground colour pale rufous, hindwing rufous-grey ***jupiter admiralitatis*** (Rothschild) (p. 145)

– Underside with forewing ground color ochreous yellow, hindwing grey-green ***jupiter attilla*** (Grose-Smith) (p. 145)

22(15) Forewing upperside with discal band ill-defined and diffused with brown scales
andrewsi (Butler) (p. 147)
– Forewing upperside with discal band or patch readily distinguished 23
23(22) Forewing upperside with proximal white spots in cells M_2 and M_3 absent as distinct elements, fused with discal patch. Forewing underside with no black bars in cells Cu_{1a} and Cu_{1b} 24
– Forewing upperside normally with proximal white spots in cells M_2 and M_3 not present, or having separate identity from discal patch. Forewing underside with black bars in cells Cu_{1a} and Cu_{1b} 25
24(23) Underside. Forewing with DII in discal cell broad. Hindwing with submarginal black spots and orange admarginals very strongly marked . ***sempronius sempronius*** (Fabricius) (p. 153)
– Underside. Forewing with DII in discal cell narrow. Hindwing with submarginal black spots and orange admarginals faint . . . . . ***sempronius tiberius*** (Waterhouse) (p. 155)
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– Hindwing underside with cells R_5 and M_1 having postdiscal ocelli atrophied or of different colour to other postdiscal ocelli 28
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gilolensis obiensis (Rothschild) (p. 139)
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– Hindwing upperside with glaucous outer margin of discal band joined to admarginals only at tornus . . . . . ***gilolensis buruana*** (Rothschild) (p. 140)
28(25) Hindwing underside with MI forming a curve and incorporating transverse bar across vein 2A . . . . . ***clitarchus*** (Hewitson) (p. 146)
– Hindwing underside with MI forming a jagged line, often not joining transverse bar across 2A. 29
29(28) Forewing upperside with discal patch extended via blue-grey scaling to base of wing. Very little pale scaling in discal cell 30
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30(29) Forewing upperside with discal band not reaching discal cell, discal spots in cells M_2 and M_3 separate from discal band . . . . . ***pyrrhus pyrrhus*** (Linnaeus) (p. 138)
– Forewing upperside with discal band reaching into discal cell, discal spots in cells M_2 and M_3 joined to discal band . . . . . ***pyrrhus bandana*** (Rothschild) (p. 138)
31(29) Upperside with submarginal spots of forewing apex large, disco-basal patch within a few millimetres of submarginal spots in cell Cu_{1b} 32
– Upperside with submarginal spots small or medium sized, disco-basal patch ending more than 10 millimetres from submarginal spots in cell Cu_{1b} 34
32(31) Forewing upperside with discal spot in cell M_2 normally less than half the size of that in cell M_3. Distal glaucous scaling of disco-basal patch often within 5 mm of submarginal spots in cell Cu_{1b}. Sumbawa . . . . . ***galaxia jovis*** (Staudinger) (p. 149)
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– Forewing upperside with disco-basal patch not glaucous distally, or only slightly so . . 35
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– Upperside with pale markings yellow 38
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– Forewing underside with submarginal spots not chevron-shaped. Uncus blunt, slightly bifid 80
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– Upperside with forewing discal band at its widest, in the male, just above vein Cu_{1b}, in cell Cu_{1a}, female widest at vein Cu_{1b} 46
45(43) Forewing upperside with structural blue associated with discal band present. Underside with triangular green area in cells M_2 and M_3 above discal band small ***schreiber niasica*** (Butler) (p. 163)
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46(44) Both sexes small, males average approximately 38·0 mm in forewing length, females approximately 44·0 mm. Java . . . . . ***schreiber schreiber*** (Godart) (p. 160)
– Both sexes large, males average approximately 43·0 mm in forewing length, females approximately 48·5 mm. Malay Peninsula, Singapore, Sumatra, Bangka and Belitung ***schreiber tisamenus*** (Fruhstorfer) (p. 162)
47(40) Hindwing upperside with discal band ill-defined proximally, often reached to wing base . 48
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53(52) Subapical spot of forewing upperside normally between 3 and 4 mm across. Sikkim, Assam, Nagaland and Burma . . . . . ***moori sandakana*** (Fruhstorfer) (p. 185)

– Subapical spot of forewing upperside normally between 2 and 3 mm across 54

54(53) Disco-basal patch of male hindwing upperside normally extended along vein M_1 to join admarginals. West Malaysia, Singapore and Sumatra . . . ***moori moori*** (Distant) (p. 184)

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55(54) Male small, forewing length approximately 31 mm. Bali . ***moori chalazias*** (Fruhstorfer) (p. 187)

– Male larger, forewing length normally above 33 mm 56

56(55) Hindwing underside with discal band not extending as far as the bend in vein M_3. Borneo and Natuna Is . . . . . ***moori saida*** (Preyer & Cator) (p. 187)

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57(51) Upperside hindwing with disco-basal patch very large, isolating black scaling in each cell to circular areas, or obliterating it entirely 58

– Upperside hindwing with disco-basal patch more restricted, black scaling continuous from tornus to anal angle 60

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59(58) Hindwing upperside with disco-basal patch normally obscuring the black areas in each cell down to the submarginal white spots. Sumatra . . . . ***hebe hebe*** (Butler) (p. 178)

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60(57) Upperside of forewing with disco-basal patch extended along veins Cu_{1b} and 2a to within a few millimetres of the outer margin. Hindwing disco-basal patch distally strongly dentate. Borneo . . . . . ***hebe ganymedes*** (Staudinger) (p. 181)

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64(61) Hindwing upperside with admarginals strongly suppressed except at tornus, tails without blue centres. Bali . . . . . ***hebe nikias*** (Fruhstorfer) (p. 182)

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– Hindwing upperside with glaucous distal margin of disco-basal patch extensive and sometimes joining with admarginals at vein M_2 66

66(65) Underside with black lines finely marked. Bawean . . ***hebe baweanica*** (Fruhstorfer) (p. 183)

– Underside with black lines normally marked 67

67(66) Forewing upperside with subapical spot large, in males 3·0 to 3·5 mm across. Kangean ***hebe kangeana*** (Fruhstorfer) (p. 182)

– Forewing upperside with subapical spot small, in males 1·5 to 2·5 mm across. Lombok ***hebe lombokiana*** (Fruhstorfer) (p. 183)

68(47) Upperside with discal bands white, often greenish white anteriorly, with some structural blue scaling distal to the hindwing band . . . . . ***arja*** (Felder & Felder) (p. 176)

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– Wing shape elongate (forewing costal length / length of inner margin = 1·46(♂), 1·49(♀)) . 76

70(69) Upperside with discal bands very narrow (forewing band no broader than 4 mm at its narrowest point in the male, 6 mm in the female). Andaman Is ***athamas andamanica*** (Fruhstorfer) (p. 168)

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– Hindwing shape normal, outer margin distinctly convex 73

73(72) Forewing underside normally with DII present as two distinct black spots in the discal cell. Sri Lanka, India, Bangladesh, Burma, China, Taiwan, Hainan, Vietnam, Laos, Thailand and West Malaysia . . . . . ***athamas athamas*** (Drury) (p. 166)

– Forewing underside normally with DII present as one distinct spot in the discal cell. Occasionally there is an indication of a second spot 74

74(73) Hindwing upperside with admarginals normally completely suppressed, except at the tornus, where a small residual yellow spot often remains. Tails normally with almost no blue scaling. Sumatra, Borneo and Natuna Is . . . . ***athamas ureaus*** (Rothschild) (p. 169)

– Hindwing upperside with admarginals normally orange, or if suppressed not so at the tornus. Tails blue-centred 75

75(74) Forewing upperside with subapical spot in cell R_5 normally absent, orange admarginals normally present at the middle of the cells. Palawan ***athamas palawanica*** (Rothschild) (p. 170)

– Forewing upperside with subapical spot in cell R_5 normally present, admarginals in male somewhat suppressed, normally slightly apparent below vein M_2. Java ***athamas attalus*** (Felder & Felder) (p. 171)

76(69) Forewing upperside with subapical spots in cells R_4 and R_5. India and Burma ***agraria agraria*** (Swinhoe) (p. 173)

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77(76) Forewing upperside with one postdiscal spot in cell M_1 only 78

– Forewing upperside with postdiscal spots in cells R_5 and M_1 79

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– Upperside forewing with postdiscal spot of cell R_5 normally less than half the size of that in cell M_1. Hindwing with submarginal spots normally large. Bali, Lombok, Sumbawa, Sumba, Alor, Flores, Adonara, and Pantar . . . . ***agraria sumbaensis*** (Swinhoe) (p. 174)

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81(80) Forewing underside without brown band running along costal margin 82

– Forewing underside with brown band running along costal margin 83

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– Forewing upperside with submarginal spots and proximal chevrons in cell Cu_{1b} not joined to chevron in cell Cu_{1a} and only joined to the disco-basal patch along vein 2A. E. China ***nepenthes kiangsiensis*** (Rousseau-Decelle) (p. 208)

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– Forewing underside with MI, MII and DI forming a well-defined 'Y' 88

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– Hindwing upperside with admarginals distinctly blue towards the veins 86

85(84) Hindwing upperside submarginal spots small and pale, yellow lunules proximal to them normally distinct in each cell. N. central India . . . . ***dolon dolon*** (Westwood) (p. 209)

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86(84) Upperside with light markings pale yellowish green. North East Frontier Agency of India, NE. Burma and China . . . . . ***dolon carolus*** (Fruhstorfer) (p. 211)

– Upperside with light markings greenish yellow 87

87(86) Hindwing upperside with tails blue with a distinct black border. Submarginal purple spots generally small and of uniform colour. Central and eastern Assam, Nagaland and Manipur . . . . . ***dolon magniplaga*** (Fruhstorfer) (p. 210)

– Hindwing upperside with tails almost completely blue, rarely is there a distinct black border. Submarginal purple spots large, sometimes white-centred. Central and southern Burma, Thailand and Laos . . . . . ***dolon grandis*** (Rothschild) (p. 211)

88(83) Hindwing underside with a chevron-shaped postdiscal spot in each cell. Forewing upperside with submarginal and postdiscal spots present 89

– Hindwing underside with postdiscal band simplified, having no chevron-shaped spots in anterior half. Forewing upperside with one row of spots only 97

89(88) Hindwing upperside with brown basal band present, strongly in male, less so in female . . 90

– Hindwing upperside with no basal band, or only a very slight trace of one 94

90(89) Hindwing upperside with admarginals completely blue or glaucous except at tornus which is yellow. Taiwan . . . . . ***eudamippus formosana*** (Rothschild) (p. 204)

– Hindwing upperside with admarginals glaucous distally, yellow proximally and at tornus, or completely pale yellow 91

91(90) Forewing underside with two large black spots beyond the bar at the end of the discal cell, and distal to these, to further elongate spots. S. China (northern Guangdong Province) ***eudiamippus kuangtungensis*** (Mell) (p. 203)

– Forewing underside with at most, two black spots forming a thin bar distal to the bar at the end of the discal cell 92

92(91) Hindwing upperside with black submarginal band very broad 93

– Hindwing upperside with black submarginal band very narrow, forming a series of conjoined ocelli. Hainan . . . . . ***eudamippus whiteheadi*** (Crowley) (p. 203)

93(92) Underside with yellow bands broad, outer margin of postdiscal yellow band of forewing highly dentate. Okinawa . . . . . ***eudamippus weismanni*** (Fritze) (p. 205)

– Underside with yellow bands narrower, outer margin of postdiscal yellow band of forewing fairly straight. W. central China . . . . . ***eudamippus rothschildi*** (Leech) (p. 202)

94(89) Upperside forewing with tail of Y-marking not extending below vein Cu_{1a}, and discal cell mostly pale. Hindwing submarginal band often very narrow. Specimens from N. India and Bangladesh . . . . . ***eudamippus eudamippus*** (Doubleday) (p. 119)

– Upperside forewing with tail of Y-marking often extending below vein Cu_{1a}, or brown coloration from discal cell extending downwards to inner margin. Hindwing submarginal band often broader 95

95(94) Hindwing underside with postdiscal chevrons only very slightly blue-edged. Yellow admarginal at tornus very large and distinctly joined to postdiscal yellow band. SW. China ***eudamippus cupidinius*** (Fruhstorfer) (p. 202)

– Hindwing underside with postdiscal chevrons distinctly blue-edged. Yellow admarginal at tornus smaller, not normally connected to postdiscal yellow band 96

96(95) Forewing underside with DII in discal cell very small, sometimes reduced to one small black spot. West Malaysia . . . . . ***eudamippus peninsularis*** (Pendlebury) (p. 206)

– Forewing underside with DII in discal cell forming two fairly large black spots
eudamippus nigrobasalis (Lathy) (p. 200)

97(91) Forewing upperside with submarginal spots extending upwards into cell R_4 98
– Forewing upperside with submarginal spots extending upewards into cell R_5 99

98(97) Hindwing tails long. Forewing upperside with submarginal spots in cell R_4 no more than twice the distance from the outer margin than those in cell Cu_{1b}. Western, central, eastern and south-eastern China . . . . . ***narcaea narcaea*** (Hewitson) (p. 194)
– Hindwing tails short. Forewing upperside with submarginal spot in cell R_4 more than twice the distance from the outer margin than those in cell Cu_{1b}. SW. China
narcaea menedemus (Oberthür) (p. 196)

99(97) Upperside of forewing with some brown scaling at the base. Hindwing with a distinct brown basal band. Taiwan . . . . . ***narcaea meghaduta*** (Fruhstorfer) (p. 197)
– Upperside of forewing with no brown scaling extraneous to that of the costal band at the base. Hindwing without a basal band 100

100(99) Hindwing upperside with dark postdiscal band blue-centered up to cell M_2. NE. India
narcaea aborica (Evans) (p. 197)
– Hindwing upperside with dark postdiscal band lacking a blue centre above vein Cu_{1a} . . 101

101(100) Hindwing upperside with postdiscal band black and fairly broad. Burma and Vietnam
narcaea thawgawa (Tytler) (p. 198)
– Hindwing upperside with postdiscal band brown and narrow, often becoming obscured in cells M_1 and M_2. Thailand and Nagaland . . . . ***narcaea lissainei*** (Tytler) (p. 198)

Polyura gamma (Lathy)

(Figs 69, 70)

Charaxes gamma Lathy, 1898: 226. Holotype ♂, NEW CALEDONIA (BMNH) [examined].
Eulepis gamma (Lathy) Rothschild & Jordan, 1898: 566, figs 18, 18a.
Eriboea aristophanes Fruhstorfer, 1913: 139; 1914: 729. LECTOTYPE ♂, NEW CALEDONIA [described from 'Shortland Is'] (BMNH), here designated [examined].
Eriboea gamma (Lathy) Fruhstorfer, 1914: 729; Lathy, 1925: 97, pl. 3, fig. 7(♀ description).
Polyura gamma (Lathy) Stichel, 1939: 603; D'Abrera, 1971: 246, fig. [figure caption transposed with *P. epigenes*]; Holloway & Peters, 1976: 302; D'Abrera, 1977: 246, fig.
Polyura gamma aristophanes (Fruhstorfer) Holloway & Peters, 1976: 302.

MALE. *Upperside.* Ground colour black-brown becoming lighter towards wing bases. All markings creamy white. Forewing with a continuous row of submarginal spots from cell R_4 to cell Cu_{1b}, that in the last named being double. Two postdiscal spots in cells R_5 and M_1 and a row of discal spots in cells M_2 to Cu_{1b}, that in Cu_{1b} being double and forming a short band which may extend to the inner margin. Hindwing with a single submarginal row of spots in each cell. Semi-lunar, partially occluded markings are present proximal to these spots in cells M_3, Cu_{1a} and Cu_{1b}, and are the remnants of the ocelli. A discal band is present from the costal margin to cell M_2. *Underside.* Ground colour grey-brown with the same markings as are found on the upperside. In addition there are black markings including MI, DI, MII and DII in the forewing, and EI, EII, MI, DI, MII and DII in the hindwing. The hindwing also possesses a row of postdiscal ocelli of which only the proximal part is present, and which are partially occluded in cells R_5, M_1 and M_2. These are composed of black pupils distally, surmounted proximally by a few structural blue scales, a larger area of red, a semicircle of blue-white and a semicircle of black, in that order.

FEMALE. Differs from the male in that the pale bands are broader, the discal band of the hindwing is extended to cell Cu_{1b}, the lower half together with the postdiscal lunules in cells M_3, Cu_{1a} and Cu_{1b} becoming rufous orange. Underside paler than male.

SIZE. ♂; $\bar{x} = 30{\cdot}9$, $s = 0{\cdot}9$ (8 specimens). ♀; 3 specimens only, 32·0, 35·9, and 33·6.

DISTRIBUTION. **New Caledonia**: Voh; Hienghene (Holloway & Peters, 1976: 302); Mt Koghis. The data of specimens labelled 'Shortlands Is.' are almost certainly erroneous. 8♂, 3♀.

TYPE-MATERIAL. *Charaxes gamma* Lathy was described from a single male obtained by H. J. Adams and collected in New Caledonia. A corresponding specimen exists in the BMNH and this holotype bears the following labels; 'N. Caledonia? / B.M. Type No. Rh. 10582 / N. Caledonia. / Holotype (red) / Charaxes gamma Lathy HOLOTYPE det. R. L. Smiles 1975 '.

Eriboea aristophanes Fruhstorfer was described from two males and one female purchased in Paris by Fruhstorfer, and accepted by him as coming from the Solomon Islands. A male and a female now exist in the BMNH. The male bears the following labels; 'Type / Shortland Is. Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285. / Lectotype (purple) / Eriboea aristophanes Fruhstorfer, LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The female bears the labels; 'Type / Shortlands Is. Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285. / Paralectotype (blue) / Eriboea aristophanes Fruhstorfer, PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. This is a rare insect and the specimens that have been studied bear little information. One specimen in the BMNH was collected at 500 m. Holloway & Peters (1976: 281) state that the species is '. . . commoner in . . . the old southern vegetation associations of the laterite on ultrabasic rocks.'.

Polyura epigenes (Godman & Salvin)

(Figs 2, 8, 9, 23, 24)

Charaxes epigenes Godman & Salvin, 1888: 210.
Eulepis epigenes (Godman & Salvin) Rothschild & Jordan, 1898: 568, figs 19, 20.
Eriboea epigenes (Godman & Salvin) Fruhstorfer, 1913: 139; 1914: 729.
Polyura epigenes (Godman & Salvin) Stichel, 1939: 602; D'Abrera, 1971: 246, fig. [figure caption transposed with *P. gamma*]; 1977: 246, fig.

The only species of *Polyura* to show strong sexual dimorphism.

MALE. *Upperside.* Ground colour black with yellow spots in the forewing, and a single row of submarginal blue lunules in the hindwing. *Underside.* Ground colour brown, forewing with a complete row of white submarginal spots—pupils of the remnants of ocelli still semi-complete proximally. White spots proximally bordered with black appear postdiscally in cells R_5 and M_1, distal to the end of the discal cell in cell M_2 and discally in cells M_3, Cu_{1a} and Cu_{1b}. DI, MII and DII present in discal cell. MII bordered proximally and DII distally with white. Hindwing with a black marginal line (EI). Between this and EII, which is heavily marked, lies a narrow zone of rufous scales with some blue scaling from M_2 to tornus (the admarginals). Postdiscal spots complete, deep rufous, shaded proximally with blue and black-bordered. MI complete, distally bordered with white; MII from costa to origin of Cu_{1b} bordered proximally with white. DI present as a bar at end of discal cell.

FEMALE. *Upperside.* Differs by the presence of a cream-yellow discal band from Cu_{1a} to inner margin of forewing and from costal margin of hindwing narrowing to a point at Cu_{1b}, this lower portion being largely enclosed with diffuse blue scaling. Wing bases olivaceous brown. *Underside.* Ground colour much paler than male. Forewing with white spots and bands larger. Hindwing with white band which corresponds to that on the upperside, with without the associated blue scaling. Externae less pronounced.

RANGE. Solomon Islands: Guadalcanal, Tulagi, Bougainville, Shortland Islands, Choiseul, Vella Lavella, Rendova and Santa Isabel.

Polyura epigenes epigenes (Godman & Salvin)

(Figs 8, 9, 23, 24)

Charaxes epigenes Godman & Salvin, 1888: 210; Grose-Smith & Kirby, 1888: 5, pl. 3, figs 1–4. LECTOTYPE ♂, GUADALCANAL (BMNH), here designated [examined].
Polyura epigenes [*epigenes*] (Godman & Salvin) Stichel, 1939: 602.

Male forewing with yellow spots on discal area and a strong row of yellow submarginal spots.

SIZE. ♂; 5 specimens only, 37·3, 37·3, 36·1, 38·4, 39.8. ♀; $\bar{x} = 43{\cdot}3$, $s = 1{\cdot}9$ (10 specimens).

DISTRIBUTION. **Tulagi. Guadalcanal**: Aola; Honiara; Koala Ridge; Mt Austin. 5 ♂, 10 ♀.

TYPE-MATERIAL. Described from one male and several females, one male and three females of which are in the BMNH and bear the following labels; 'Aola, Guadalcanar I. Woodford. /

Godman-Salvin Coll. 94.–187.'. In addition, the male bears the following labels; 'Lectotype (purple) / B.M. TYPE No. Rh. 10423. Charaxes epigenes ♂ G. &. S. / Charaxes epigenes Godman & Salvin LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The three females also bear the following labels; 'Paralectotype (blue) / B. M. TYPE No. Rh. 10424 5 6 Charaxes epigenes. ♀ G. & S. / Charaxes epigenes Godman & Salvin PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. This is an uncommon butterfly and much of the material is poorly labelled. However, there are records in the BMNH for its capture during April and May. I have captured a male feeding on dog faeces.

Polyura epigenes monochroma (Niepelt)

Charaxes (*Eulepsis*) (sic) *epigenes* f. *monochromus* Niepelt, 1914: 32, pl. 9, fig. 5. Holotype ♂, BOUGAINVILLE (BMNH) [examined].
Eriboea epigenes f. *monochromus* (Niepelt) Gabriel, 1932: 25.
Polyura epigenes monochromus (Niepelt) Stichel, 1939: 602.

Only the male differs from the nominate subspecies, and this by its lack of yellow discal spots in the forewing upperside. Often the submarginal spots of the forewing upperside are deminished.

SIZE. ♂; 2 specimens only, 38·0, 39·9, ♀; $\bar{x} = 44{\cdot}1$, $s = 2{\cdot}8$ (12 specimens).

DISTRIBUTION. **Bougainville**: Arawa. **Shortland Is. Choiseul I.**: south side. **Vella Lavella. Rendova. Santa Isabel I.** 2 ♂, 12 ♀.

TYPE-MATERIAL. Described from a single male. This holotype is now in the BMNH and bears the following labels; 'Holotype (red) / Salomon Archipel. Bougainville. / Original / Charaxes monochroma / Joicey Bequest Brit. Mus. 1934–120. / Charaxes epigenes f. monochromus Niepelt HOLOTYPE det. R. L. Smiles 1975'.

BIONOMICS. There are records in the BMNH for this rare butterfly during January, February, May, June to July and December.

Polyura caphontis (Hewitson)

(Figs 7, 22, 71, 72)

Charaxes caphontis Hewitson, 1863: 64, pl. 32, figs 14, 15; Butler, 1874: 280; Fruhstorfer, 1902: 354.
Nymphalis caphontis (Hewitson) Kirby, 1871: 270.
Eulepis caphontis (Hewitson) Rothschild & Jordan, 1898: 564, figs 17, 17a.
Eriboea caphontis (Hewitson) Fruhstorfer, 1914: 729, pl. 135b.
Polyura caphontis (Hewitson) Stichel, 1939: 603; D'Abrera, 1971: 246, fig.; Robinson, 1975: 329; D'Abrera, 1977: 246, fig..

MALE, FEMALE. *Upperside.* Ground colour brown. Forewing with yellow submarginal and postdiscal spots. Hindwing with admarginals red, a yellow submarginal row of spots and a postdiscal row of rufous spots. There is often a discal yellow streak reaching from the costal margin to Cu_{1a} or beyond. *Underside.* Ground colour rufous in male, grey-brown in female. Forewing submarginal spots white in cells Cu_{1a} and Cu_{1b}, obscured to a greater or lesser degree in other cells. Postdiscal white spots in cells other than Cu_{1a}, Cu_{1b} or 2A, which may unite to form a band, variable, sometimes becoming completely obscured. Hindwing with admarginals red; black-centered, blue submarginal ocelli, a postdiscal row of rufous spots in which those in cells R_5 and M_1 are orange, and that in cell M_2 completely absent except for a proximal blue lunule which is also to be found on all other postdiscal spots. DI present at end of discal cell.

RANGE. Confined to the islands of Fiji.

Polyura caphontis caphontis (Hewitson)

(Fig. 71)

Charaxes caphontis Hewitson, 1863: 64, pl. 32, figs 14, 15. Holotype ♀, FIJI [described from 'Australia'] (BMNH) [examined].

MALE, FEMALE. *Upperside.* Yellow discal bands narrow, sometimes disappearing altogether in the hindwing.

SIZE. ♂; $\bar{x} = 37{\cdot}1$, $s = 1{\cdot}2$ (23 specimens). ♀; $\bar{x} = 42.5$, $s = 1{\cdot}9$ (7 specimens).

DISTRIBUTION. **Viti Levu I.**: Lami (4 km E. of Suva); Tholoisuva; Korolevu (Robinson, 1975: 329); Suva; Tamavua. **Ovalu I. Taveuni I.**: Waiyevo. 24 ♂, 11 ♀.

TYPE-MATERIAL. Described from one female erroneously believed to have come from Australia. This specimen is now in the BMNH and bears the following labels; 'Holotype (red) / Fiji Is. ex errore Australia Port Denison. Hewitson Coll. 79–69 Charaxes caphontis. / Port Denison Austl. / B.M. TYPE No. Rh. 10422 Charaxes caphontis, ♀ Hew. / Charaxes caphontis Hewitson. HOLOTYPE det. R. L. Smiles 1975'.

BIONOMICS. There are records in the BMNH of capture during February, March, July and November.

Polyura caphontis nambavatua subsp. n.

(Figs 7, 22, 72)

MALE, FEMALE. *Upperside.* Yellow discal bands broad, always present in hindwing, extending to cell Cu_{1a}. Diffuse green scaling from discal bands to wing bases in forewing much more evident than in *P. c. caphontis.*

SIZE. ♂; 4 specimens only, 38·1, 38·6, 37·9, 38·6. ♀; 4 specimens only, 43·3, 44·5, 45·9, 47·9.

DISTRIBUTION. **Vanua Mbalavu I.**: Nambavatu (Nabavatin).

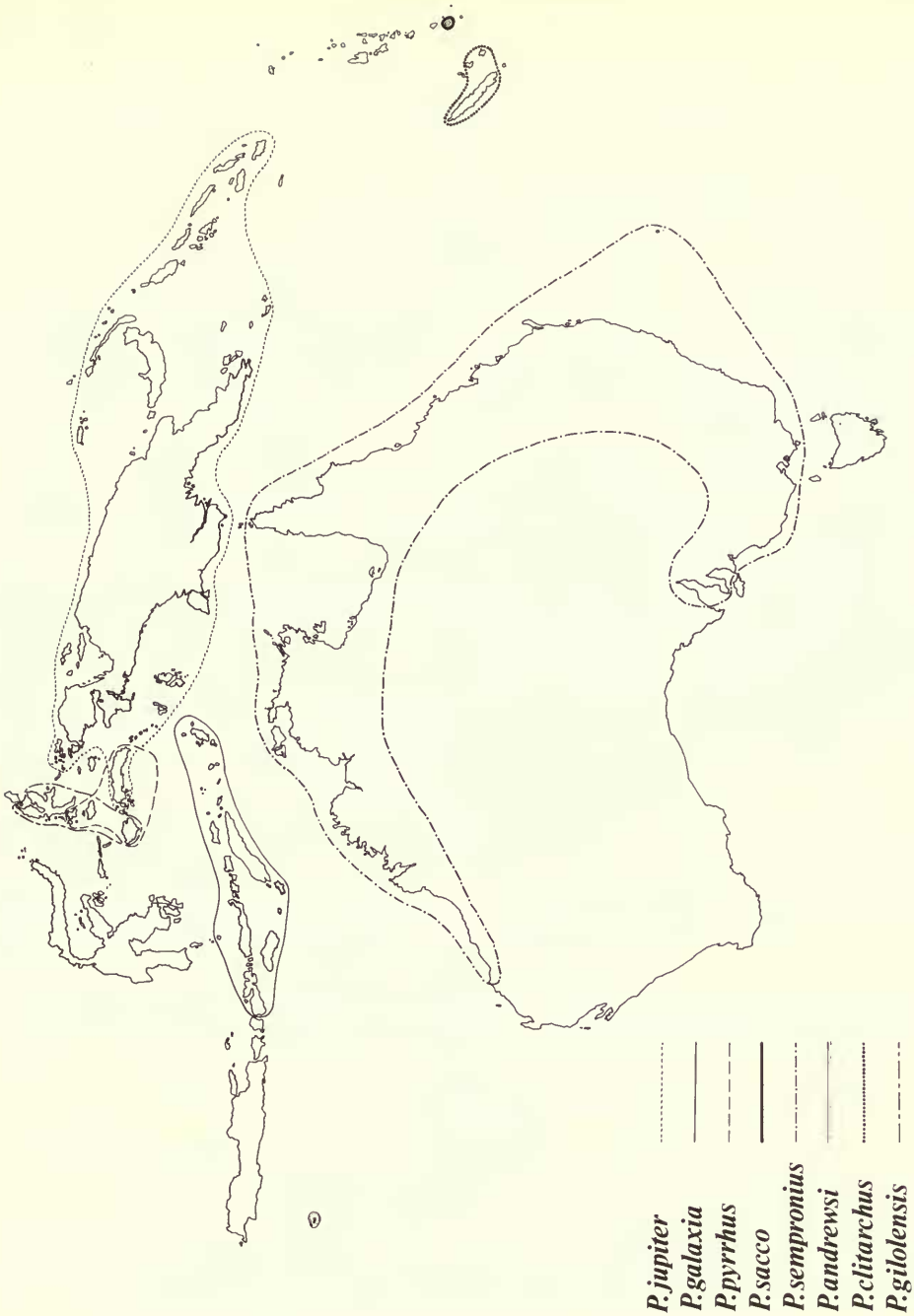
TYPE-MATERIAL. The type-series is composed of four males and four females each of which bear the label; 'A. S. Corbet coll. B.M. 1948–587.'. The holotype is a male and in addition bears the following labels; 'Holotype (red) / FIJI IS: Nabavatin. 27.vii.1929. / Polyura caphontis nambavatua HOLOTYPE det. R. L. Smiles 1978'. The paratypes bear the following labels; 'Paratype (yellow) / Polyura caphontis nambavatua PARATYPE det. R. L. Smiles 1978'. In addition three female paratypes bear the label; 'FIJI IS: Nabavatin. 27.vii.1929.', the remaining paratypes bear the following labels: one male; 'FIJI IS: Nabavatin, 15.vii.1929', one male; 'FIJI IS: Nabavatin. 19.ix.1929', one male; 'FIJI IS: Nabavatin. 25.vii.1929', one female; 'FIJI IS: Nabavatin. 18.ix.1929'.

Polyura pyrrhus (Linnaeus)

(Figs 10, 25, 73, 74, Map 1)

Papilio pyrrhus Linnaeus, 1758: 462.
Eulepis pyrrhus (Linnaeus) Rothschild & Jordan, 1898: 572, figs 24, 25.
Eriboea pyrrhus (Linnaeus) Fruhstorfer, 1914: 726; Talbot, 1920: 405.
Polyura pyrrhus (Linnaeus) Stichel, 1939: 593; D'Abrera, 1971: 244, fig.; Common & Waterhouse, 1972: 277; D'Abrera, 1977: 244, fig.

MALE, FEMALE. *Upperside.* Ground colour black. Forewing with a row of cream submarginal spots from cells R_4 to Cu_{1b}. Single postdiscal spots of similar colour present in cells R_5 and M_1, and cream discal spots in cells M_2 and M_3. A cream-yellow discal band runs from cell Cu_{1a} to the inner margin. The area from the proximal side of this band to the wing base is suffused by grey-blue scaling. Hindwing with blue admarginals in cells R_5 to Cu_{1b}, that in Cu_{1b} being interrupted by an oval yellow spot. A complete row of white submarginal spots present in cells R_1 to Cu_{1b}, which may be encircled lightly with blue scaling. A series of postdiscal blue lunules are to be found in cells R_5 to Cu_{1b}. These are often connected proximally to a cream-yellow discal band by diffuse blue scaling. This band has fairly diffuse margins, and runs from the costal margin, where it is broadest, tapering to vein Cu_{1a} or thereabouts. The area from this band to the wing base is suffused densely with blue-grey scales. *Underside.* Ground colour yellow-ochre approaching grey in distal areas of the hindwing. Forewing with a complete row of submarginal white spots from cell R_4 to cell Cu_{1b}. A postdiscal black band distally bordered with lilac runs the entire length of the wing. The pale spots and bands of the discal area correspond with those of the upperside, but are proximally bordered with black (MI, DI and part of MII). MII and DII present in discal cell, some white scaling being present between the two. Hindwing tails blue-centered, admarginals yellow. EII black, proximally surmounted with white



Map 1 Distribution of the *Polyura pyrrhus*-group in the Australian Region and part of Indonesia.

diffuse streaks. Postdiscal spots in cells R_1, and M_2 to Cu_{1b} crimson centrally, proximally lilac, and the whole enclosed in black. In cells R_5 and M_1 the crimson is replaced by yellow and the distal black by lilac scaling. A white discal band is present which corresponds with that of the upperside, but which is more clearly defined, and is proximally bordered by MI. MII present closer to base, proximally bordered with white. 2A and 3A strongly overlayed with black running distally into a black line which crosses cell 2A—an extension of MI.

RANGE. Buru, Ambon, Seram, Saparua, Batjan and the Banda Is.

Polyura pyrrhus pyrrhus (Linnaeus)

(Figs 10, 25, 73)

Papilio pyrrhus Linnaeus, 1758: 462; Clerck, 1764: pl. 25, figs 3, 4; Cramer, [1779]: 45, pl. 220, figs A, B; Herbst, 1790: 53, pl. 62, figs 1, 2. Syntype ♂, [AMBON] (University of Uppsala, Uppsala) [colour transparency of upperside examined].
Papilio cano-maculatus Goeze, 1779: 88. Syntype[s] (sex?) 'AMERICANUS' (untraced) [not examined]. [Synonymized by Stichel, 1939: 594].
Paphia pyrrhus (Linnaeus) Latreille, 1809: 197.
Polyura pyrrhus (Linnaeus) Billberg, 1820: 79.
Charaxes pyrrhus (Linnaeus) Butler, 1866: 632; Kirby, 1877: 748; Staudinger, 1886: 173; Butler, 1896: 387.
Nymphalis pyrrhus (Linnaeus) Kirby, 1871: 270; Pagenstecher, 1884: 187; 1897: 403.
Charaxes canomaculatus (Goeze) Kirby, 1877: 748.
Eulepis pyrrhus pyrrhus (Linnaeus) Rothschild & Jordan, 1898: 579, fig. 24; Rothschild, 1915*a*: 134.
Eriboea pyrrhus pyrrhus (Linnaeus) Fruhstorfer, 1914: 728; Talbot, 1920: 405.
Eulepis pyrrhus canomaculatus (Goeze) Tindale, 1923: 342.
Polyura pyrrhus [*pyrrhus*] (Linnaeus); Stichel, 1939: 593.
Polyura pyrrhus pyrrhus (Linnaeus); D'Abrera, 1971: 244, fig.; 1977: 244, fig.

MALE, FEMALE. *Upperside.* Forewing discal band not reaching discal cell, discal spots in cells M_2 and M_3 separate from discal band. *Underside.* MI and MII strongly marked in cells Cu_{1a} and Cu_{1b} of the forewing.

SIZE. ♂; $\bar{x} = 47{\cdot}2$, $s = 1{\cdot}4$ (40 specimens). ♀; $\bar{x} = 56{\cdot}2$, $s = 1{\cdot}9$ (24 specimens).

DISTRIBUTION. **Buru**: Bara; [Gamoe 'Mrapat, Central West Buru]; Kaku Tegalago; [River Tehat]; Leksula. **Ambon. Seram**: [Bomfia]; Manusela. **Saparua. Batjan.** 61 ♂, 24 ♀.

TYPE-MATERIAL. *Papilio pyrrhus* Linnaeus was described from an undisclosed number of specimens one male of which is now in the collection of Queen Ludovica Ulrica at Uppsala University.

BIONOMICS. There are records in the BMNH for January, February, February to March, April, May, October and November at altitudes between 650 and 1500 m.

Polyura pyrrhus bandana (Rothschild)

(Fig. 74)

Eulepis pyrrhus bandanus Rothschild, 1898: 581, fig. 25. Holotype ♀ BANDA IS. (BMNH) [examined].
Eriboea pyrrhus bandanus (Rothschild) Fruhstorfer, 1914: 728; Talbot, 1920: 406.
Polyura pyrrhus bandanus (Rothschild) Stichel, 1939: 598; D'Abrera, 1971: 244; 1977: 244.

FEMALE. *Upperside.* Forewing discal band reaches and extends into discal cell, discal spots in cells M_2 and M_3 not separate from discal band. *Underside.* Black bands generally less pronounced than in nominate subspecies. Forewing with MI and MII not present in cell Cu_{1b}, reduced to a spot in cell Cu_{1a}.

SIZE. ♀; 2 specimens only, 58·1 and 55·7.

DISTRIBUTION. **Banda Is.**: Gr. Banda. 2 ♀.

TYPE-MATERIAL. Described from a single female from the Banda Is. This holotype is now in the BMNH and bears the following labels; 'Holotype (red) / Banda / Rothschild Bequest B.M. 1939–1. / Euelpis pyrrhus bandanus Roths. HOLOTYPE det. R. L. Smiles 1975'.

BIONOMICS. One female in the BMNH was collected during October, otherwise nothing is known.

Polyura gilolensis (Butler) **stat. rev.**

(Figs 1, 11, 26, 75–77, Map 1)

Charaxes gilolensis Butler, 1869: 14, pl. 5, fig. 6, pl. 6, fig. 3; Oberthür, 1880: 504.
Nymphalis gilolensis (Butler) Kirby, 1871: 271; Pagenstecher, 1897: 403.
Polyura pyrrhus gilolensis (Butler) Stichel, 1939: 599.

MALE, FEMALE. *Upperside.* Ground colour black. Forewing with a complete series of submarginal spots from cells R_4 to Cu_{1b}, double in the last. Postdiscal spots in cells R_5 and M_1. Discal spots separate and distinct from discal band present in cells M_2 and M_3 in male, joined to band in female. Discal band extensive, widest at inner margin and reaching to wing base and M_3, sometimes intruding into discal cell. All markings of forewing pale yellow, discal band becoming glaucous towards base and discal cell. Hindwing with submarginal spots present from cells R_1 to Cu_{1b}, glaucous and sometimes white-centered, double in cell Cu_{1b}. Admarginal bars glaucous, often yellow at centre of cells and, in cell Cu_{1b}, mainly orange. Discal band extends from base to tornus, pale yellow, becoming glaucous distally. *Underside.* Ground colour ochreous-grey. Forewing submarginal spots as in upperside but connected by a grey, indistinct band. Pale markings lighter than upperside but occupying much the same positions. A black band runs postdiscally from the costal margin to the inner margin. MI present proximal to pale markings in cell R_5 (running beyond this almost to the costal margin), cell M_1 and proximal to the discal band and spots in cells M_2, M_3, Cu_{1a} and Cu_{1b}. DI joined to MI at end of discal cell. MII is present in the discal cell, being proximally outlined with white, also in cells Cu_{1a} and Cu_{1b}. DII forms a strong black bar surrounded by white, proximal to MII in the discal cell. Hindwing, admarginal bars mainly yellow-orange, becoming grey-blue towards the veins. Submarginal spots positioned as in upperside, but distally bordered with grey-blue and black. Postdiscal spots complete in every cell, brick red distally, black and proximally grey and black. Discal band white or off white, very narrow and bordered proximally by MI which turns 90° towards the anal margin (here the band may be interrupted), and crosses vein 2A, which together with 3A is strongly overlayed with black. MII lies basally to this and is bordered proximally by a white band.

Abdomen often grey, and no white examples have been seen.

Polyura gilolensis gilolensis (Butler)

(Figs 11, 26, 75)

Charaxes gilolensis Butler, 1869: 14, pl. 5, fig. 6, pl. 6, fig. 3. LECTOTYPE ♂, BATJAN (BMNH), here designated [examined].
Eulepis pyrrhus gilolensis (Butler); Rothschild & Jordan, 1898: 584, fig. 28.
Eriboea pyrrhus gilolensis (Butler); Fruhstorfer, 1914: 728.
Polyura pyrrhus gilolensis (Butler); D'Abrera, 1971: 245; 1977: 245.

MALE. *Upperside.* Forewing with discal spots in cells M_2 and M_3 of similar size. Hindwing with glaucous part of discal band joining admarginal bars at veins Cu_{1a} and Cu_{1b} as well as at tornus. Submarginal spots, of both sexes, white centred.

MALE, FEMALE. *Underside.* Hindwing with discal band reaching from costal margin to cell Cu_{1a}.

SIZE. ♂; $\bar{x} = 44{\cdot}9$, $s = 1{\cdot}4$ (40 specimens). ♀; 2 specimens only, 51·8, 53·6.

DISTRIBUTION. **Batjan. Halmahera** (Gilol). 48 ♂, 2 ♀.

TYPE-MATERIAL. Described from an unspecified number of male specimens collected by A. R. Wallace. There is, in the BMNH, one male which can definitely be ascribed to the type-series, which bears the following labels; ' Lectotype (purple) / Batchian. Hewitson Coll. 79–69 Charaxes gilolensis. / C. Gilolensis Butler type / B.M. TYPE No. Rh. 10432. / Charaxes gilolensis Butler LECTOTYPE det. R. L. Smiles 1978 ', and is hereby designated lectotype.

BIONOMICS. BMNH specimens of this butterfly were collected during August and August to September.

Polyura gilolensis obiensis (Rothschild)

(Fig. 76)

Eulepis pyrrhus obiensis Rothschild, 1898: 583, fig. 27. LECTOTYPE ♂, OBI I. (BMNH), here designated [examined].

Eriboea pyrrhus obiensis (Rothschild); Fruhstorfer, 1914: 728.
Polyura pyrrhus obiensis (Rothschild); D'Abrera, 1971: 244; 1977: 244.

MALE. *Upperside.* Discal spot in cell M_2 normally much smaller than that of cell M_3. Hindwing with glaucous part of discal cell not normally joined to admarginal bars except at tornus. Submarginal spots without centres. *Underside.* Hindwing with discal band not normally reaching beyond M_2.

SIZE. ♂; $\bar{x} = 45{\cdot}1$, $s = 1{\cdot}6$ (14 specimens).

DISTRIBUTION. **Obi Is.**: Obi [Obi major], Laiwui. 14 ♂.

TYPE-MATERIAL. Described from five male specimens now in the BMNH and bearing the following labels; 'Laiwui, Obi, Sept. 97. (W. Doherty). / Rothschild Bequest B.M. 1939–1.' In addition one male bears the following labels; 'Lectotype (purple) / Eulepis pyrrhus obiensis Rothschild LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The remaining four males also bear the following labels; 'Paralectotype (blue) / Eulepis pyrrhus obiensis Rothschild PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. This butterfly is recorded as having been captured during September.

Polyura gilolensis buruana (Rothschild)

(Fig. 77)

Eulepis pyrrhus buruanus Rothschild, 1898: 582, fig. 26; Rothschild, 1915: 134. LECTOTYPE ♂, BURU I. (BMNH), here designated [examined].
Eriboea pyrrhus buruanus (Rothschild); Fruhstorfer, 1914: 728; van Eecke, 1929: 363.
Polyura pyrrhus buruanus (Rothschild) Stichel, 1939: 598.

MALE. *Upperside.* Forewing with discal spots in cells M_2 and M_3 of similar size. Hindwing submarginal spots white-centred. Glaucous outer margin of discal band not joining admarginals except at tornus. *Underside.* Hindwing with pale discal band reaching from costal margin to cell Cu_{1a}.

SIZE. ♂; 3 specimens only, 44·8, 42·5, 44·5.

DISTRIBUTION. **Buru**: Bara (Rothschild, 1915: 134); [Mnges'Wain]; Leksula; Nal Besi, Fakal; [Bah'Lelé] (van Eecke, 1929: 363); [Mt Mada]. 3 ♂.

TYPE-MATERIAL. Described from two males now in the BMNH and which bear the following labels; 'North Coast of Buru. XI. 97. (W. Doherty). / Rothschild Bequest B.M. 1939–1.' In addition, one male bears the following labels; 'Lectotype (purple) / Eulepis pyrrhus buruanus Rothschild LECTOTYPE det. R. L. Smiles 1978', and is designated lectotype. The remaining male bears the following additional labels; 'Paralectotype (blue) / Eulepis pyrrhus buruanus Rothschild PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. There are records in the BMNH for September and November.

Polyura sacco Smart

(Figs 12, 27, 78, Map 1)

Polyura sacco Smart, 1977: 56, figs 1 & 2. Holotype ♂, TANA IS. (P. Smart coll.) [2 paratypes, genitalia and photographs of holotype examined].

MALE, FEMALE. *Upperside.* Ground colour black, becoming brown at bases. Forewing with all spots and bands yellow. A complete row of submarginal spots present, also postdiscal spots in cells R_5 and M_1 and a discal band incorporating the spots in cells M_2 and M_3 and ending on the inner margin. Hindwing with marginal bars in each cell orange, bordered faintly with yellow or blue-green scaling. A complete row of yellow lunules present submarginally, a yellow discal band tapers from its commencement on the costal margin until it stops in cell Cu_{1b}. This band is bordered distally by a light, diffuse blue-green band which is more distinct in the female. The discal bands of the upperside are distinct, well defined marginally and do not extend to the wing bases. *Underside.* Ground colour red-brown with corresponding pale bands as on the upperside. In addition, proximal to the submarginal spots of the forewing, is a thin band of a light structural blue colour, bordered proximally with black which extends from R_4 to Cu_{1b} or very slightly further. MI, DI

and part of MII border the remaining forewing bands proximally, MI and MII being clearly present in cells Cu_{1a} and Cu_{1b}. MII and DII are present in the discal cell, MII being bordered proximally and the more costal half of DII on both sides by light structural blue scales. Hindwing with slightly orange borders to the submarginal lunules. EII between the lunules and the marginal orange bars black, surrounded by structural blue. Postdiscal lunules crimson in cells R_1, M_3, Cu_{1a} and Cu_{1b}, largely so in cell M_2, orange in cells R_5 and M_1 bordered proximally with light structural blue scales—also distally in the case of the lunules in cells R_5, M_1, M_2 and M_3. MI and MII present as thin black lines. MI proximal to discal band, MII runs from the costal margin to the commencement of Cu_{1b} on the median vein. A white band runs proximally to this and on into cell Cu_{1b}. Veins 2A and 3A are overlayed with black and lightly surrounded by light blue.

SIZE. ♂; 1 specimen only, 39·3. ♀; 2 specimens only, 46·5, 45·2.

DISTRIBUTION. **Vanuatu** (New Hebrides): Tanna Island; Lornatum, north of Isangel (Smart, 1977: 58), Lenakel. Burgess *in* Smart (1977: 58) reports that '*P. sacco* is found in an area extending from five miles south to ten miles north of the district headquarters station of Isangel / Lenakel and for about a mile inland from the coast. As much of the south of Tanna is densely forested, however, and as collecting is confined to the few and primitive earth "roads", it is probable that the butterfly occurs over a much wider area. The fact that it has hitherto escaped detection in a fairly well collected locality suggests that it may eventually be found to occur on the neighbouring islands such as Erromango'. 1♂, 3♀, genitalia of holotype.

TYPE-MATERIAL. The male holotype and four male and five female paratypes are in the P. Smart collection, St Mary's, West Sussex. One male and one female paratype are deposited on permanent loan in the BMNH, and these bear the label; 'Paratype (yellow)'. In addition the male bears the following label; 'South New Hebrides Tanna Island, near Isangel 1–7 May 1976 (A. Sacco) SARUMAN MUSEUM Paratype 1. Polyura sacco ♂'. The female bears the additional labels; 'FEEDING ON SAP OF YOUNG EUCALYPTUS TREE IN GARDEN ALTITUDE ABOUT 150–200' / South New Hebrides Tanna Island. Isangel / Lenakel 7.x.1975 (A. Sacco) SARUMAN MUSEUM Paratype 2. Polyura sacco ♀'.

BIONOMICS. Specimens have been taken during January, August (Smart, 1977: 58), May and October at 45–60 m. It has been recorded as feeding on the sap—particularly fermenting—of various trees, especially Mandarin Orange, but also *Eucalyptus* and Bamboo. It has been described as, 'shy and retiring and having the typically powerful flight of the Charaxinae' (Burgess *in* Smart, 1977: 59).

EARLY STAGES. Little is known of the early stages of this butterfly, although it has been speculated that the foodplant is a species of *Poinciana* (Burgess *in* Smart, 1977: 59).

The fully grown caterpillar bears two tricoloured marks on the dorsal surface which are cranially dark greenish blue, then white, and posteriorly red, most probably on the third and fifth abdominal segments respectively. In common with other species of *Polyura*, the head is four horned.

The pupa is of similar shape to *P. sempronius* and is green, but with white on the wing cases only (A. Sacco, pers. comm.).

Polyura jupiter (Butler)

(Figs 79–82, 84, 85, 88–90, Map 1)

Charaxes jupiter Butler, 1869: 14, pl. 5, figs 4, 7.
Euelpis pyrrhus jupiter (Butler) Rothschild & Jordan, 1898: 573, fig. 22.
Eriboea pyrrhus jupiter (Butler) Fruhstorfer, 1914: 728, pl. 135a.
Eriboea jupiter (Butler); Talbot, 1920: 406.
Polyura pyrrhus jupiter (Butler) Stichel, 1939: 599.
Polyura jupiter (Butler); D'Abrera, 1971: 245, figs; 1977: 245, figs.

MALE, FEMALE. *Upperside.* Ground colour black, becoming brown towards wing bases. Forewing with a continuous row of cream-yellow submarginal spots, double in cell Cu_{1b}, postdiscal cream-yellow spots in cells R_5 and M_1, a discal band of similar colour running from cell Cu_{1a} to the inner margin and surmounted by discal spots in cells M_2 and M_3. Hindwing admarginals blue and restricted to the more posterior part of the outer margin and tails, with an orange spot at the tornus. A submarginal series of blue or white spots present. Cream-yellow discal band present which tapers from its commencement on the coastal margin to

cell Cu_{1b}, proximally bordered with blue. The discal bands of the upperside are well defined and do not extend into the wing bases. *Underside*. Ground colour rufous brown, becoming slightly olivaceous towards the outer margin. Forewing submarginal spots extended to form a narrow band. A similar band lies proximally to this and is a vestige of part of the ocelli. The pale bands correspond with those of the upperside, but are creamy white and proximally bordered by MI. DI, MII and DII present in discal cell, partly bordered with white as is a further portion of MII which appears in cells Cu_{1a} and Cu_{1b}. Hindwing tails blue-centred, margin black, admarginals ochraceous orange. A complete row of submarginal ocelli present, one in each cell, double in cell Cu_{1b}, and each bordered proximally with white. Postdiscal lunules crimson, proximally blue-bordered, and the whole enclosed with black in cells M_3, Cu_{1a} and Cu_{1b}, similar, but becoming yellow posteriorly in cell R_1. Lunules in cells R_5, M_1 and M_2 yellow or rufous yellow and bordered distally with light scaling in place of the black. The proximal black borders of the postdiscal lunules distally border the discal band, which is creamy white and closely approximates to the position of that of the upperside. Discal band bordered proximally with white. Veins 2a and 3a overlayed with black which ends just before the tornus on a curved, black line crossing 2A and 3A (part of MI).

Abdomen above brown, sometimes pale beneath.

RANGE. From Seram and Watubala through Kai Is., Aru, Waigeo, Biak, New Guinea, Fergusson I., Trobriand Is., The Bismark Archipelago and Tagula to the Solomon and Admiralty Is.

Polyura jupiter jupiter (Butler)

(Figs 79, 80)

Charaxes jupiter Butler, 1869: 14, pl. 5, figs 4, 7; Salvin & Godman, 1877: 145. Holotype ♂, DORE (UM, Oxford) [examined].
Nymphalis jupiter (Butler) Kirby, 1871: 271.
Charaxes pyrrhus kronos Honrath, 1888: 250. LECTOTYPE ♂, NEW BRITAIN (BMNH), here designated [examined].
Charaxes jupiter chronos (sic) Honrath; Ribbe, 1898: 131.
Eriboea pyrrhus chlorus Fruhstorfer, 1914: 728. LECTOTYPE ♂, WAIGEO (BMNH), here designated [examined].
Eriboea pyrrhus jupiter (Butler) Fruhstorfer, 1914: 728, pl. 135a.
Eriboea pyrrhus kronos (Honrath) Fruhstorfer, 1914: 728.
Eriboea jupiter jupiter (Butler); Talbot, 1920: 406.
Eriboea jupiter chlorus Fruhstorfer; Talbot, 1920: 406.
Polyura pyrrhus chlorus (Fruhstorfer) Stichel, 1939: 599.
Polyura pyrrhus jupiter (Butler) Stichel, 1939: 599.
Polyura pyrrhus kronos (Honrath) Stichel, 1939: 600.
Polyura jupiter jupiter (Butler); D'Abrera, 1971: 245, fig.
Polyura jupiter kronus (sic) (Honrath); D'Abrera, 1971: 245; 1977: 245.

MALE, and FEMALE. *Upperside*. Forewing discal band cream or pale yellow; sometimes approaching, but never as dark as *keianus*, rarely with any associated glaucous scaling. Hindwing blue on distal margin of discal band joining with that on the outer margin at the tornus and normally vein Cu_{1b}.

Both *Charaxes pyrrhus kronos* Honrath and *Eriboea pyrrhus chlorus* Fruhstorfer fall within the range of variation exhibited by *P. j. jupiter* on mainland New Guinea.

SIZE. ♂; $\bar{x} = 43{\cdot}6$, $s = 1{\cdot}8$ (40 specimens). ♀; $\bar{x} = 50{\cdot}1$, $s = 2{\cdot}8$ (24 specimens).

DISTRIBUTION. **Waigeo. Irian Jaya**: [Kapaur]; Ati Ati Onin; [River Uty]; Arfak Mts, Anggi Lakes, [Mt Siwi]; Dore; Teluk Irian [Geelvinck Bay], [Rom]; Wanggar River, 24 km from Coast; [Nomnagihé], 40 km south of Wanggar; Weyland Mts, Menoo River, Waisai River; Snow Mts, Upper Setekwa River; Eilanden River; Humboldt Bay; Wandamen Mrs. **Papua New Guinea**: Madang (Fr. Wilh. Hafen); Astrolabe Bay; Erima; Melanua (Constantinhafen); west side of Herzog Mts, Watut River to [Buiang]; Finschafen; Simbana; Rawlinson Mts; Manam I. [Vulcan I.]; Rihona, Eastern Highlands; Port Moresby; Angabunga River, affl. of St Joseph River; Aroa River, [Owgarra]; Mambare River, Biagi; Hydrographer Mts; [Ekeikei]; [Babooni]; Milne Bay. **Fergusson I. Trobriand Is.**: Kiriwini. **New Britain** (Neu Pommern): [Kinigunang] (Ribbe, 1898: 131); [Herbertshöhe]; Ralum. **Duke of York I. New Ireland. New Hanover. Tagula I.** (Sudest Isl.): Mt Riu. 177 ♂, 30 ♀.

TYPE-MATERIAL. *Charaxes jupiter* Butler was described from a single male from 'Dory' collected by A. R. Wallace. This holotype is now in the UM, Oxford and bears the following labels; 'Holotype (red) / Dor. 71 / ♂. Dor. / C. jupiter Butler type / Coll. Wallace 1871. / Type. Butl. Lep. Ex. 1. p. 14. n. 4 t. 5 fig. 1. / Charaxes jupiter Butler HOLOTYPE det. R. L. Smiles 1978'.

Charaxes pyrrhus kronos Honrath is represented in the BMNH by a pair of syntypes which bear the following labels; 'Ralum, N. Pom. Parkinson 1886 / Specimen typicum / Adams Bequest. B.M. 1912–399.', in addition the male bears the following labels; 'Lectotype (purple) / B.M. TYPE No. Rh. 10600 / Charaxes pyrrhus kronos Honrath LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The female bears the following labels; 'Paralectotype (blue) / B.M. TYPE No. Rh. 10601 / Charaxes pyrrhus kronos Stichel PARALECTOTYPE det. R. L. Smiles 1978'.

Eriboea pyrrhus chlorus Fruhstorfer was described from two males and one female in the Fruhstorfer and two males in the Rothschild collection. These specimens are now in the BMNH. One male bears the following labels; 'Lectotype (purple) / Waigiu H. Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285. / Eriboea pyrrhus chlorus Fruhstorfer LECTOTYPE det. R. L. Smiles 1978', and is designated lectotype. Of the remaining, one male and one female bear the following labels; 'Paralectotype (blue) / Waigiu H. Fruhstorfer / Type / Fruhstorfer Coll. B.M. 1937–285. / Eriboea pyrrhus chlorus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1978', and two males; 'Paralectotype (blue) / WAIGEU. Platen. / Rothschild Bequest B.M. 1931–1. / Eriboea pyrrhus chlorus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. Specimens have been recorded for all months of the year except August, at altitudes of 180–1800 m. A female in the UM, Oxford was taken whilst flying around a Lime tree and was probably attracted by exuding sap.

EARLY STAGES. This butterfly has been reared on *Albizia fulva* and has been observed feeding on *Albizia chinensis* (Szent-Ivany & Carver, 1967: 8) (Leguminosae).

Polyura jupiter from Seram

(Fig. 81)

Eriboea jupiter ab. *rectifascia* Talbot, 1920: 405. Syntypes ♂, ♀, SERAM (BMNH) [examined].

MALE, FEMALE. *Upperside.* Hindwing with grey-blue associated with discal band more restricted than in the nominate subspecies, not reaching grey-blue on the outer margin. The name *rectifascia* was originally applied to a few specimens collected in central Seram with almost no grey-blue scaling on the distal margin of the discal band. Most specimens from Seram have more glaucous scaling than this but are not so extensively glaucous as in *P. j. jupiter*, although a few specimens of the nominate subspecies may approach them.

SIZE. ♂; $\bar{x} = 44{\cdot}2$, $s = 2{\cdot}1$ (30 specimens). ♀; 1 specimen only, 50·1.

DISTRIBUTION. **Seram**: Manusela; Bonfia; Valley of R. Koea, Toloearang. 30♂, 1♀.

TYPE-MATERIAL. *Eriboea jupiter* ab. *rectifascia* Talbot was described from a series of three males and one female. These specimens are now in the BMNH and bear the following labels; 'Syntype (blue) / 2.20 / Joicey Bequest. Brit. Mus. 1934–120. / Eriboea jupiter rectifascia Talbot SYNTYPE det. R. L. Smiles 1978'. In addition two males bear the following label; 'Central Ceram. Mansuela, 6000 ft. Oct. & Nov.' 19 C. F. & J. Pratt.', and one male and one female the following; 'Central Ceram. Mansuela, 2500 ft. Oct. & Nov.' 19 C. F. & J. Pratt.'

BIONOMICS. This butterfly has been taken during August, October to November and December at altitudes between 30 and 1800 m.

Polyura jupiter glauca (Joicey & Talbot)

(Fig. 82)

Eriboea pyrrha glauca Joicey & Talbot, 1916: 73. LECTOTYPE ♂, BIAK (BMNH), here designated [examined].

Eriboea jupiter glauca Joicey & Talbot; Talbot, 1920: 406.
Polyura pyrrhus glauca (Joicey & Talbot) Stichel, 1939: 602.

MALE, FEMALE. *Upperside.* Forewing discal band with extended glaucous distal edge. Discal spot in cell M_3 smaller than in *P. j. jupiter.*

The status of this taxon must remain in doubt until more specimens are seen.

SIZE. ♂; 2 specimens only, 40·7, 42·3. ♀; 1 specimen only, 51·5.

DISTRIBUTION. **Biak** (Schouten Is.): Biak. **Aru I.** 2 ♂, 1 ♀.

TYPE-MATERIAL. Described from two males and one female in the BMNH, and which bear the following labels; 'Biak, Schouten Is. North N. Guinea. June 1914. A. C. and F. Pratt. / Joicey Bequest. Brit. Mus. 1934–120.'. In addition the female bears the following labels; 'Lectotype (purple) / Eriboea pyrrha glauca Joicey & Talbot LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. Two males also bear the following labels; 'Paralectotype (blue) / Co. Type. / Eriboea pyrrha glauca Joicey & Talbot PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. The three specimens of this butterfly in the BMNH were collected during June.

Polyura jupiter watubela (Rothschild)

(Fig. 85)

Eulepis pyrrhus watubela Rothschild, 1903: 311. Holotype ♂, WATUBELA Is. (BMNH) [examined].
Eriboea pyrrhus watubela (Rothschild) Fruhstorfer, 1914: 728.
Eriboea jupiter watubela (Rothschild); Talbot, 1920: 406.
Polyura pyrrhus watubela (Rothschild) Stichel, 1939: 601.
Polyura jupiter watubela (Rothschild); D'Abrera, 1971: 245.

MALE. *Upperside.* Discal bands pale yellow, lighter than *P. j. keiana.* Forewing spots in cells M_2 and M_3 separate from one another, and more separate from discal band than in that subspecies, but not so much as in *P. j. jupiter.*

SIZE. ♂; one specimen only, 46·8.

DISTRIBUTION. **Watubela Is.**: Kissui. 1 ♂.

TYPE-MATERIAL. Described from a holotype in the BMNH which bears the following labels; 'Holotype (red) / Kissoei, Watoebela (Kühn). / Rothschild Bequest B.M. 1939–1. / Eulepis pyrrhus watubela Roths. det. R. L. Smiles 1975'.

BIONOMICS. This butterfly has been recorded flying in March (Fruhstorfer, 1914: 728).

Polyura jupiter keiana (Rothschild)

(Figs 84, 88)

Charaxes pyrrhus keianus Rothschild, 1897: 508. Holotype ♀, KAI Is. (BMNH) [examined].
Charaxes keianus Rothschild; de Nicéville & Kühn, 1898: 262, pl. 1, figs 4, 4a, 4b; de Nicéville, 1898: 140, pl. Z, figs 13, 14.
Eulepis pyrrhus keianus (Rothschild) Rothschild & Jordan, 1898: 578, pl. 6, fig. 2.
Eriboea pyrrhus keianus (Rothschild) Fruhstorfer, 1914: 729.
Eulepis pyrrhus juta Hulstaert, 1924: 80. 2 syntypes ♀, KAI BESAR (untraced) [not examined]. **Syn. n.**
Polyura pyrrhus keianus (Rothschild) Stichel, 1939: 601.
Polyura pyrrhus juta (Hulstaert) Stichel, 1939: 601.
Polyura jupiter keianus (Rothschild); D'Abrera, 1971: 245; 1977: 245.

MALE, FEMALE. *Upperside.* Discal bands yellow, tending to be wider than in the nominate subspecies. Forewing with discal spots in cells M_2 and M_3 very close or joined to discal band. *Underside.* Forewing with MI in cell M_2 fused with DI at end of discal cell and forming straight line with MI in cell M_3.
Female much larger than the male.

Eulepis pyrrhus juta Hulstaert, according to the original description, falls within the variation exhibited by the BMNH series of this butterfly.

SIZE. ♂; $\bar{x}$ = 45·4, s = 1·6 (21 specimens). ♀; $\bar{x}$ = 53·6, s = 2·0 (19 specimens).

DISTRIBUTION. **Ewab Is.** (Key Is., Kei Is.): Kai Besar (Gr. Key), Har (Hulstaert, 1924: 80); Kai Doelah, Tual (Kei Toeal), [Robde]; Kai Ketjil (Little Key Island). 21 ♂, 19 ♀.

TYPE-MATERIAL. *Charaxes pyrrhus keianus* Rothschild was described from a female holotype, four male and two female paratypes. Of these, the holotype, three male and two female paratypes are in the BMNH. The holotype, two male and two female paratypes bear the following labels; 'Kei Toeal, I-III. 96 H. C. Webster / Rothschild Bequest B.M. 1939–1.'. One male paratype bears the following labels; 'Gr. Key. iv. 96 Webster / Rothschild Bequest B.M. 1939–1.'. In addition the holotype bears the following labels, 'Holotype (red) / Charaxes pyrrhus keianus Roths. HOLOTYPE det. R. L. Smiles 1975', and the paratypes; 'Paratype (yellow) / Charaxes pyrrhus keianus Roths. PARATYPE det. R. L. Smiles 1975'.

BIONOMICS. This butterfly has been taken during April, January to March and June to July.

EARLY STAGES. The pupa of this butterfly has been illustrated by de Nicéville & Kühn (1898: 261, pl. 1, figs 4, 4a, 4b) and is described as being 'pale green with snow white stripes and dashes'. Similar to *P. sempronius*. In the same paper the larva is noted as feeding on *Albizia* sp. (Leguminosae) and *Mesua ferrea* (Guttiferae).

Polyura jupiter admiralitatis (Rothschild)

(Fig. 89)

Eulepis pyrrhus admiralitatis Rothschild, 1915*b*: 208. LECTOTYPE ♂, ADMIRALTY IS. (BMNH), here designated [examined].
Eriboea jupiter admiralitatis (Rothschild) Talbot, 1920: 406.
Polyura pyrrhus admiralitatis (Rothschild) Stichel, 1939: 601.

MALE, FEMALE. Larger than most specimens of the nominate subspecies, with proportionately narrower discal bands on upperside and underside than in other subspecies. *Underside*. Ground colour pale rufous. Forewing with MI in cell M_2 fused with DI at end of discal cell, but like *P. j. attila* in not forming straight line with MI in cell M_3.

SIZE. ♂; one specimen only, 47·5. ♀; five specimens only, 52·3, 56·3, 54·1, 55·4, 55·6.

DISTRIBUTION. **Admiralty Is.**: Manus. 1 ♂, 5 ♀.

TYPE-MATERIAL. Described from one male and five females which are now in the BMNH and bear the following labels; 'Manus, Admiralty Isl. Sept. Oct. 1913 [Meek's Expedition] / Rothschild Bequest B.M. 1939–1.' In addition the male bears the following 'Lectotype (purple) / Eulepis pyrrhus admiralitatis Rothschild LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The five females also bear the following; 'Paralectotype (blue) / Eulepis pyrrhus admiralitatis Rothschild PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. This butterfly is recorded as having been taken during September and October.

Polyura jupiter attila (Grose-Smith)

(Fig. 90)

Charaxes attila Grose-Smith, 1889: 301; Grose-Smith & Kirby, [1887–1891]: 11. LECTOTYPE ♂, GUADALCANAL I. (BMNH), here designated [examined].
Charaxes editha Ribbe, 1898: 131; Rothschild & Jordan, 1898: 576. Holotype ♀, BOUGAINVILLE I. (BMNH) [examined].
Eriboea pyrrhus attila (Grose-Smith) Fruhstorfer, 1914: 728.
Eriboea pyrrhus editha (Ribbe) Fruhstorfer, 1914: 728.
Eriboea jupiter attila (Grose-Smith); Talbot, 1920: 406.
Eriboea jupiter editha (Ribbe); Talbot, 1920: 406.
Polyura pyrrhus attila (Grose-Smith) Stichel, 1939: 600.
Polyura pyrrhus editha (Ribbe) Stichel, 1939: 601.

Polyura jupiter attila (Grose-Smith); D'Abrera, 1971: 244, fig.
Polyura jupiter editha (Ribbe); D'Abrera, 1971: 245.

MALE. Similar in shape and size to *P. j. admiralitatis*. *Upperside.* Forewing with submarginal spots larger than in the above. *Underside.* Ground colour ochraceous yellow, sometimes becoming grey-green.

FEMALE. As male but larger and with straighter outer margins to forewings.

Charaxes editha Ribbe falls within the range of variation shown by the series of Solomon Is. *P. jupiter* in the BMNH, and although subtle differences *may* occur fairly constantly within the individual islands, no assessment can yet be made as to whether such is the case, as there is at present too little material available to make any adequate study of the nature of the variation within this group.

SIZE. ♂; 4 specimens only, 47·5, 52·6, 52·0, 45·0 mm. ♀; $\bar{x} = 55{\cdot}6$, $s = 2{\cdot}8$ (12 specimens).

DISTRIBUTION. **Solomon Is.**: Bougainville I.; Vella Lavella I.; Gizo I., Ranongga; Guadalcanal I., Aola. 4♂, 13♀.

TYPE-MATERIAL. *Charaxes attila* Grose-Smith was described from an unspecified number of specimens. In the BMNH are one male and one female belonging to the original type-series which bear the following labels; 'Guadalc: Solomon Is. / Type. / Joicey Bequest. Brit. Mus. 1934–120.' In addition the male bears the following labels; 'Lectotype (purple) / Charaxes attila Grose-Smith LECTOTYPE det. R. L. Smiles 1978', and is here designated lectotype. The female also bears the following labels; 'Paralectotype (blue) / Charaxes attila Grose-Smith PARALECTOTYPE det. R. L. Smiles 1978'.

Charaxes editha Ribbe, was described from a single specimen, the holotype, which is now in the BMNH and which bears the following labels; 'Holotype (red) / Salomo Archip. Bougainville C. Ribbe / Original / Rothschild Bequest B.M. 1939–1. / Charaxes editha Ribbe HOLOTYPE det. R. L. Smiles 1976'.

BIONOMICS. This butterfly has been taken during the months of March, April, May, July and November.

Polyura clitarchus (Hewitson)

(Figs 13, 28, Map 1)

Charaxes clitarchus Hewitson, 1874: 37, pl. 19, figs 16, 17; Butler, 1876: 613. LECTOTYPE ♂, NEW CALEDONIA (BMNH), here designated [examined].
Eulepis clitarchus (Hewitson) Rothschild & Jordan, 1898: 570, fig. 21.
Eriboea clitarchus (Hewitson) Fruhstorfer, 1914: 728.
Polyura clitarchus (Hewitson) Stichel, 1939: 602; D'Abrera, 1971: 245, figs; 1977: 245; Holloway & Peters, 1976: 302.

MALE, FEMALE. *Upperside.* Ground colour black. Forewing with complete row of submarginal spots, cream at apex and becoming progressively glaucous until completely so in the double spots of cell Cu_{1b}. Cream postdiscal dash stretching from radials to M_2. Discal patch cream-yellow, occupying distal half of discal cell and cells Cu_{1a}, Cu_{1b} and 2a, ending on inner margin. This is well-defined distally, less so proximally, cream sometimes glaucous scales reaching to the base in some cases. Hindwing with admarginals for the most part glaucous, interrupted at veins, somewhat orange towards centres, that of cell Cu_{1b} being mainly distinctly orange. Submarginal spots and postdiscal lunules glaucous, disco-basal patch creamy yellow, reaching from anal margin to costal margin. Cells 2a and 3a somewhat buff coloured in male. *Underside.* Ground colour rufous-brown. Forewing submarginal spots forming an ill-defined band. Postdiscal streak in corresponding position to that of upperside as the discal band is for the most part, except that this is more clearly defined than that of the upperside and does not reach so far towards the base. MI present proximal to posdiscal streak and proximal to anteriorly pointing 'tooth' of discal band in cells M_2 and M_3. MI often present in cell Cu_{1b} as a complete or partial circle, but is never found in cell Cu_{1a}. DI present at end of discal cell, and in the discal cell, MII proximal to this at the distal edge of the discal band, while DII forms a very heavy black bar on the proximal edge of the discal band. Hindwing outer margin black with a white fringe. Admarginals ochreous yellow, interrupted at the veins by blue scales which extend into the tails. Submarginal spots black, outlined proximally by blue then white scales. Postdiscal lunules complete, crimson in cells R_1, M_3, Cu_{1a} and Cu_{1b}, slightly lighter in cells R_5, M_1 and M_2, bordered distally with black,

proximally with pale structural blue scales. Discal band off-white, commencing on costal margin and narrowing to anal margin, bordered distally by MI which curves to the anal margin and interrupts the heavy, black line above 2A. 3A covered by a similar line, and both of these also outlined by thin, pale blue lines. MII runs from costal margin, where it is often found curving to join MI, to the commencement of Cu_{1b} on the cubitus. This is bordered proximally by a fairly diffuse bluish white line which extends beyond MII to end in cell Cu_{1b} just anterior to MI.

Abdomen brown to buff above, brown beneath.

SIZE. ♂; $\bar{x}$ = 43·4, s = 1·2 (40 specimens). ♀; 2 specimens, 51·0, 51·8.

DISTRIBUTION. **Loyalty Is.**: Mare; Lifu. **New Caledonia**: 'Entres des Grottes'; Poya; Ouen Toro; Yahoué; Mt Koghi; Ile de Pins (Holloway & Peters, 1976: 302). 40 ♂, 2 ♀.

TYPE-MATERIAL. Described from an undisclosed number of specimens from New Caledonia. One male in the BMNH can be definitely ascribed to the above and bears the following labels; 'Lectotype (purple) / [New Caledonia] Hewitson Coll. 79–69 / B.M. TYPE No. Rh. 10427. / Charaxes clitarchus Hewitson LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype.

BIONOMICS. One male in the BMNH of this forest species (Holloway & Peters, 1976: 280) was taken during August.

Polyura andrewsi (Butler) stat. rev.

(Figs 14, 29, Map 1)

Charaxes andrewsi Butler, 1900: 61, Pl. 9, fig. 8. LECTOTYPE ♂, CHRISTMAS I. (BMNH), here designated [examined].
Eriboea pyrrhus andrewsi (Butler) Talbot, 1920: 406.
Polyura pyrrhus andrewsi (Butler) Stichel, 1939: 602.

MALE, FEMALE. *Upperside.* Ground colour dark brown. Forewing with a complete row of submarginal spots, double in cell Cu_{1b}. Postdiscal spots of similar size in cells R_5 and M_1. Discal spots present in cells M_2 and M_3 surmounting a very diffuse, often almost obliterated discal band from Cu_{1a} to inner margin. All these pale markings yellow. Area from wing base to discal band clothed with buff-coloured scales. Hindwing outer margin black, partly fringed with white between the veins. Admarginals yellow-orange-centred becoming glaucous towards the veins and this extending into the tails. Submarginal spots complete and white, double in cell Cu_{1b}. Discal band band commencing on costal margin, better defined than that of forewing, but becoming diffuse posteriorly between cells M_1 and M_2. Area from discal band to within approximately 5 mm of tornus in male and 8 mm in female, to wing base clothed with buff, hair-like scales. *Underside.* Ground colour ochreous grey. Forewing with complete row of submarginal spots, double in cell Cu_{1b}. A black line runs down the wing between the discal band and submarginal spots from R_4 to 2a, bordered distally from R_4 to Cu_{1a} by a silver-blue line. Pale markings off-white. Discal band well defined, running from M_2 (incorporating what would be the discal spots on the upperside) to the inner margin and extending anteriorly into the discal cell. The band thus encloses an area of ground colour bordered by MI and DI, which are almost on top of one another at the end of the discal cell; MI being also present in cell M_3; and MII. DII is present as a thick, waisted, black bar lying in the discal cell proximal to the discal band. Hindwing outer margin black, fringed only slightly with white. Admarginals yellow-orange which often extends into the tails. Sometimes, however, the tails are blue-centred. Submarginal spots complete, double in cell Cu_{1b}, black-centred, bordered by blue proximal to which lies a white spot. Postdiscal lunules brick-red, complete in cells, R_1, M_2, M_3, Cu_{1a} and Cu_{1b} with silver-blue scaling proximal to them, and bordered both distally and proximally with black. In cells R_5 and M_1 the lunules are almost obliterated, but the proximal silver-blue and black lines are present, the former being much more evident. A white discal band commences on the costal margin, narrows to end in cell Cu_{1b} and is proximally bordered by MI. MII runs from the costal margin to end in discal cell distally bordering a white line which extends to end diffusely in cell Cu_{1b}. 2A and 3A overlayed with black.

Abdomen in male brown above, buff beneath; in female brown above, only slightly paler beneath.

SIZE. ♂; $\bar{x}$ = 4·5, s = 1·2 (11 specimens). ♀; $\bar{x}$ = 52·9, s = 1·5 (13 specimens).

DISTRIBUTION. **Christmas I.**: Flying Fish Cove; Rocky Pt. 11 ♂, 13 ♀.

TYPE-MATERIAL. Described from a series of males and females in which no holotype was indicated. Five males and eight females in the BMNH are members of the type-series. One male bears the following labels; 'Lectotype (purple) / May, 1898. Christmas Island Flying Fish Coast / Rothschild Bequest B.M. 1939–1. / Charaxes andrewsi Butler LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The remaining specimens bear the following labels; 'Paralectotype (blue) / Charaxes andrewsi Butler PARALECTOTYPE det. R. L. Smiles 1978'. In addition, they bear the following labels, one male; 'Flying Fish Cove, 11–4–98 / B.M. Type No. Rh. 10428 Charaxes andrewsi ♂ Butl.', one female; 'Christmas I. C. W. Andrews. / Rothschild Bequest B.M. 1939–1.', two females; 'Christmas I. C. W. Andrews. 98–20. / B.M. Type No. Rh. 10429 [10430] Charaxes andrewsi, ♀ Butl.', one male and one female; 'May, 1898. Christmas Island Flying Fish Coast / Rothschild Bequest B.M. 1939–1.', one female; 'Rocky Pt. Christmas I. C. W. Andrews. Nov. 97. / Rothschild Bequest B.M. 1939–1.', one male and three females; 'Christmas I. C. W. Andrews. 98–20. / Levick Bequest 1941–83'.

BIONOMICS. Has been taken during February, March, April, May, June and September.

Polyura galaxia (Butler) **stat. rev.**

(Figs 15, 30, 91–93, 99–104, Map 1)

Charaxes galaxia Butler, 1866: 633, pl. 37, fig. 2; 1867: 457; Grose-Smith & Kirby, 1891: Charaxes 12, pl. 5, figs 3, 4.

Nymphalis pyrrhus var. *galaxia* (Butler) Kirby, 1871: 270.

MALE, FEMALE. *Upperside.* Ground colour black. Forewing submarginal spots pale and complete. Pale postdiscal spots in cells R_5 and M_1 almost always present, sometimes fused; in female often joined to disco-basal patch, which runs from the subcostal veins to the inner margin and into the wing base. Hindwing outer margin black, slightly fringed with white. Admarginals blue or glaucous, often more or less orange at the centres. Clearly defined orange patch taking up most of the admarginal band of cell Cu_{1b}. Submarginal spots white or glaucous, normally complete. Disco-basal patch off-white to cream-yellow, running from costal margin to anal margin and into the wing base; distal margin diffuse, often glaucous. *Underside.* Ground colour grey-brown to ochreous yellow. Forewing submarginal spots pale and complete. Proximal to this a black line runs proximal to a blue-silver line ending in the region of 2a. Postdiscal spots in cells R_5 and M_1 normally fused, bordered proximally by MI. Discal spots in cells M_2 and M_3, often fused with one another and with the discal patch, bordered proximally by MI. Discal patch runs from Cu_{1a} to inner margin, but does not extend into base. MI and MII not normally present in cells Cu_{1a} or Cu_{1b}. DI present at end of discal cell. A pale bar at centre of discal cell is bordered distally by MII, proximally by DII, which forms a thick, black, waisted bar. Hindwing outer margin black, slightly fringed with white between the veins. Admarginals predominantly yellow-orange, often becoming blue or glaucous at the veins, this blue continuing into the tails. Submarginal spots complete, black distally, white proximally, the black often accompanied by blue or glaucous scaling. Postdiscal lunules in cells M_3, Cu_{1a}, Cu_{1b} and often R_1 and M_2 crimson to scarlet, bordered proximally by silver-blue, the whole ocellus being enclosed proximally and distally by black lines, the proximal ones being more complete. Those of cells R_5, M_1, and sometimes M_2 and R_1, with the red part diminished to a greater or lesser extent, but much paler than the others. Discal band white to cream, running from costal margin and tapering to end between M_2 and Cu_{1b}, bordered proximally by MI which follows a somewhat erratic zigzag course to end on the anal margin. MII runs from costal margin to cubitus and borders a pale line which ends diffusely in cell Cu_{1b}. 2A and 3A heavily overlayed with black.

Abdomen white above, white or brown beneath.

RANGE. This species is found in the islands of the Flores Sea from Sumbawa and Sumba, and east to the Tanimbar Is.

Polyura galaxia galaxia (Butler)

(Figs 91, 92)

Charaxes galaxia Butler, 1866: 633, pl. 37, fig. 2. LECTOTYPE ♂, TIMOR (BMNH), here designated [examined].

Eulepis pyrrhus galaxia (Butler) Rothschild & Jordan, 1898: 586, fig. 29.

Eulepis pyrrhus pyrrhulus Fruhstorfer, 1903: 94. LECTOTYPE ♂, WETAR (BMNH), here designated [examined]. **Syn. n.**
Eriboea pyrrhus galaxia (Butler) Fruhstorfer, 1914: 727.
Eriboea pyrrhus pyrrhulus (Fruhstorfer) Fruhstorfer, 1914: 727.
Eriboea sempronius galaxia (Butler); Talbot, 1920: 407.
Eriboea sempronius pyrrhulus (Fruhstorfer); Talbot, 1920: 407.
Polyura pyrrhus galaxia (Butler) Stichel, 1939: 595; D'Abrera, 1971: 244, fig.; 1977: 244, fig.
Polyura pyrrhus pyrrhulus (Fruhstorfer) Stichel, 1939: 596; D'Abrera, 1971: 244; 1977: 244.

MALE, FEMALE. *Upperside.* Forewing disco-basal patch reaches from just within discal cell to the outer margin less than two-thirds of the distance from the base to the tornus. Discal spots in cells M_2 and M_3 small, separate from the disco-basal patch and from each other. Postdiscal spots in cells R_5 and M_1, and submarginal spots, smaller than in *P. galaxia jovis, scipio, kalaonica, alorana, lettiana, babberica* and *antigonus.* Hindwing with disco-basal patch less glaucous distally than *P. g. jovis, scipio, kalaonica* and *alorana,* the edge being much straighter. *Underside.* Ground colour grey-brown. Forewing with MI and MII absent from cells Cu_{1a} and Cu_{1b}. Hindwing postdiscal spots in cells R_1, M_2, M_3, Cu_{1a} and Cu_{1b} crimson.

SIZE. ♂; $\bar{x}$ = 49·8, s = 1·2 (38 specimens). ♀; 5 specimens only, 59·8, 58·9, 57·1, 56·7, 57·8.

DISTRIBUTION. **Wetar. Timor**: Dili; Suai; [Timor Central]. 38 ♂, 5 ♀.

TYPE-MATERIAL. *Charaxes galaxia* Butler was described from an undisclosed number of specimens, one of which is now in the BMNH and which bears the following labels; 'Lectotype (purple) / Timor / B.M. TYPE No. Rh. 10431. Charaxes galaxia ♂ Butl. / Charaxes galaxia Butler LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype.

Eulepis pyrrhus pyrrhulus Fruhstorfer. Three male syntypes are in the BMNH and bear the following labels; 'Wetter Fruhstorfer'. In addition one male bears the following labels; 'Lectotype (purple) / Type / Adams Bequest. B.M. 1912–399. / Eulepis pyrrhus pyrrhulus Fruhstorfer LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. One male also bears the following labels; 'Paralectotype (blue) / Adams Bequest. B.M. 1912–399. / Eulepis pyrrhus pyrrhulus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1978', and the other male; 'Paralectotype (blue) / Type / Eulepis pyrrhus pyrrhulus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. There are records in the BMNH for January, February, May, October and November.

Polyura galaxia jovis (Staudinger)

(Fig. 93)

Charaxes jovis Staudinger, 1895: 357. LECTOTYPE ♂, SUMBAWA (BMNH), here designated [examined].
Charaxes (Murwareda) jovis Staudinger; de Nicéville & Elwes, 1897: 692.
Eulepis pyrrhus jovis (Staudinger) Rothschild & Jordan, 1898: 589, fig. 32.
Eriboea pyrrhus jovis (Staudinger) Fruhstorfer, 1914: 726.
Eriboea sempronius jovis (Staudinger); Talbot, 1920: 407.
Polyura pyrrhus jovis (Staudinger) Stichel, 1939: 595.

MALE, FEMALE. *Upperside.* Submarginal spots much larger than in *P. g. galaxia,* glaucous distal margin of disco-basal patch often extending to within 5 mm of submarginal spots in cell Cu_{1b}. Discal spot in cell M_2 much smaller than that in cell M_3, normally less than half the size. Hindwing submarginal spots large, often almost completely white. *Underside.* Ground colour ochreous yellow. Forewing submarginal spots larger than in *P. g. galaxia.* MI and MII often present in cells Cu_{1a} and Cu_{1b}, but are very variable. Hindwing postdiscal lunules in cells M_2, Cu_{1a} and Cu_{1b} scarlet.

SIZE. ♂; $\bar{x}$ = 49·8, s = 1·3 (12 specimens). ♀; 3 specimens only, 55·2, 55·8, 55·1.

DISTRIBUTION. **Sumbawa.** 12 ♂, 3 ♀.

TYPE-MATERIAL. Originally described from four males, one of which is now in the BMNH, and bears the following labels; 'Lectotype (purple) / Origin. / Samb. Grel. / Sumbawa I. Ex Staudinger. / Godman-Salvin Coll. 96.–18. / Charaxes jovis Staud. 446. / Charaxes jovis Staudinger LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype.

Polyura galaxia scipio (Rothschild)

(Fig. 99)

Eulepis pyrrhus scipio Rothschild, 1898: 592, fig. 34. Holotype ♀, SUMBA (BMNH) [examined].
Eriboea pyrrhus scipio (Rothschild) Fruhstorfer, 1914: 727.
Charaxes scipio (Rothschild) van den Bergh, 1917: 14.
Eriboea sempronius scipio (Rothschild) Talbot, 1920: 407.
Polyura pyrrhus scipio (Rothschild) Stichel, 1939: 595.

MALE, FEMALE. *Upperside.* Similar to *P. g. jovis.* Forewing disco-basal patch a little wider, glaucous scaling of distal edge often within 2 mm of double spot in cell Cu_{1b}. Discal spot in cell M_2 about half the size of that in cell M_3.

SIZE. ♂; $\bar{x} = 50{\cdot}9$, $s = 2{\cdot}9$ (14 specimens). ♀; $\bar{x} = 60{\cdot}7$, $s = 3{\cdot}1$ (11 specimens).

DISTRIBUTION. **Sumba**: Waingapu. 14 ♂, 11 ♀.

TYPE-MATERIAL. A female holotype, five male and three female paratypes in the BMNH bear the following label; 'Rothschild Bequest B.M. 1939–1.'. In addition the holotype bears the following labels; 'Holotype (red) / Waingapu, Sumba / Eulepis pyrrhus scipio Roths., HOLOTYPE det. R. L. Smiles 1975'. Two male paratypes also bear the following labels; 'Paratype (yellow) / S. Sumba, (A. Everett). / Eulepis pyrrhus scipio Roths., PARATYPE det. R. L. Smiles 1975', one male and one female paratype; 'Paratype (yellow) / Waingapu, Sumba / Eulepis pyrrhus scipio Roths., PARATYPE det. R. L. Smiles 1975', one female paratype; 'Paratype (yellow) / Sumba, Native Coll. / Eulepis pyrrhus scipio Roths., PARATYPE det. R. L. Smiles 1975', and two male and one female paratypes; 'Paratype (yellow) / Sumba, Febr. 96. W. Doherty. / Eulepis pyrrhus scipio Roths., det. R. L. Smiles 1975'.

BIONOMICS. Recorded as flying from November until February (Fruhstorfer, 1914: 727). There are records in the BMNH for January, February, September and December.

'According to Doherty, *scipio* in contrast with *E. eudamippus* being fond of flying near the ground, always flies above high trees.' (Fruhstorfer, 1914: 727).

Polyura galaxia kalaonica (Rothschild)

(Fig. 100)

Eulepis pyrrhus kalaonicus Rothschild, 1898: 591. LECTOTYPE ♀, KALAO (BMNH), here designated [examined].
Eriboea pyrrhus kalaonicus (Rothschild) Fruhstorfer, 1914: 728.
Eriboea sempronius kalaonicus (Rothschild); Talbot, 1920: 407.
Polyura pyrrhus kalaonicus (Rothschild) Stichel, 1939: 596.

MALE, FEMALE. *Upperside.* Similar to *P. g. scipio.* Hindwing glaucous scaling more extensive in cells R_5 and M_1. Submarginal white spots somewhat larger than in *P. g. jovis* or *scipio. Underside.* As in *P. g. jovis*, there being less tendency for MI and MII to be found in cells Cu_{1a} and Cu_{1b} of the forewing.

Specimens from Flores may be subspecifically distinct, the one battered pair in the BMNH having very pale admarginals on the hindwing upperside.

SIZE (excluding specimens from Flores). ♀; 4 specimens only, 60·1, 48·3, 56·6, 54·3.

DISTRIBUTION. **Flores**: Ende. **Kalao**. 1 ♂, 1 ♀ from Flores; 4 ♀ from Kalao.

TYPE-MATERIAL. Described from four female specimens now in the BMNH which bear the following label; 'Kalao, Dec. 95 A. Everett.'. In addition one female bears the following labels; 'Lectotype (purple) / Rothschild Bequest B.M. 1939–1. / Eulepis pyrrhus kalaonicus Rothschild LECTOTYPE det. R. L. Smiles 1978', and is designated lectotype. One female also bears the following labels; 'Paralectotype (blue) / Joicey Bequest. Brit. Mus. 1934–120. / Eulepis pyrrhus kalaonicus Rothschild PARALECTOTYPE det. R. L. Smiles 1978', and two females; 'Paralectotype (blue) / Rothschild Bequest B.M. 1939–1. / Eulepis pyrrhus kalaonicus Rothschild PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. There are records in the BMNH for capture during December.

Polyura galaxia alorana (Rothschild)

(Fig. 101)

Eulepis pyrrhus aloranus Rothschild, 1898: 588, fig. 31. Holotype ♀, ALOR (BMNH) [examined].
Eriboea pyrrhus aloranus (Rothschild) Fruhstorfer, 1914: 727.
Eriboea sempronius aloranus (Rothschild); Talbot, 1920: 407.
Polyura pyrrhus aloranus (Rothschild) Stichel, 1939: 595.

MALE, FEMALE. *Upperside.* Similar to *P. g. jovis* but forewing with a much smaller disco-basal patch covering approximately two-thirds of the inner margin, and only slightly larger than that of *P. g. galaxia. Underside.* As in *P. g. kalaonica* but hindwing postdiscal lunules in cells M_3, Cu_{1a} and Cu_{1b} crimson.

SIZE. ♀; 1 specimen only, 59·9.

DISTRIBUTION. **Alor.** 1 ♀.

TYPE-MATERIAL. Described from a female holotype now in the BMNH, and a male in Pagenstecher's collection. The holotype bears the following labels; 'Holotype (red) / Alor iv.97 Everett. / Rothschild Bequest B.M. 1939–1. / Ch. pyrrhus aloranus Type Rothsch. Nov. Zoo. 98. / Eulepis pyrrhus aloranus Rothschild HOLOTYPE det. R. L. Smiles 1975'.

BIONOMICS. The holotype was taken during April.

Polyura galaxia lettiana (Rothschild)

(Fig. 102)

Eulepis pyrrhus lettianus Rothschild, 1898: 587, fig. 30. Holotype ♀, LETI (BMNH) [examined].
Eulepis pyrrhus romanus Fruhstorfer, 1904*b*: 172. LECTOTYPE ♀, ROMANG (BMNH), here designated [examined]. **Syn. n.**
Eriboea pyrrhus lettianus (Rothschild) Fruhstorfer, 1914: 727; Talbot, 1920: 406.
Eriboea pyrrhus romanus (Fruhstorfer) Fruhstorfer, 1914: 727.
Eriboea sempronius romanus (Fruhstorfer); Talbot, 1920: 407.
Polyura pyrrhus lettianus (Rothschild) Stichel, 1939: 596; D'Abrera, 1971: 244; 1977: 244.
Polyura pyrrhus romanus (Fruhstorfer) Stichel, 1939: 596.

MALE, FEMALE. *Upperside.* Similar to *P. g. galaxia* but forewing with larger submarginal spots. Disco-basal patch slightly larger, often joined to discal spots which in turn are larger. *Underside.* As in *P. g. galaxia.*

Eulepis pyrrhus romanus Fruhstorfer falls within the range of variation exhibited by *P. g. lettiana.*

SIZE. ♂; 5 specimens only, 45·1, 46·2, 51·0, 43·4, 48·0, ♀; $\bar{x} = 56{\cdot}1$, $s = 4{\cdot}2$ (9 specimens).

DISTRIBUTION. **Kisar. Romang. Leti. Moa.** 5 ♂, 10 ♀.

TYPE-MATERIAL. *Eulepis pyrrhus lettianus* Rothschild was described from a single female. This holotype is in the BMNH and bears the following labels; 'Holotype (red) / Letti, July 1892. W. Doherty / Joicey Bequest. Brit. Mus. 1934–120. / Eulepis pyrrhus lettianus Rothschild HOLOTYPE det. R. L. Smiles 1975'.

Eulepis pyrrhus romanus Fruhstorfer was described from an unspecified number of specimens from 'Roma'. One female in the BMNH can be positively identified as belonging to the type-series, bears the following labels; 'Lectotype (purple) / Roma Fruhstorfer. / Type / Fruhstorfer Coll. B.M. 1937–285. / Eulepis pyrrhus romanus Fruhstorfer det. R. L. Smiles 1978', and is hereby designated lectotype.

BIONOMICS. Has been recorded as flying in July (Fruhstorfer, 1914: 727), and according to records in the BMNH, has been taken during July and August.

Polyura galaxia antigonus (Fruhstorfer)

(Fig. 103)

Eulepis pyrrhus antigonus Fruhstorfer, 1904*a*: 140. LECTOTYPE ♂, DAMAR (BMNH), here designated [examined].

Eriboea pyrrhus antigonus (Fruhstorfer) Fruhstorfer, 1914: 727; Talbot, 1920: 406.
Polyura pyrrhus antigonus (Fruhstorfer) Stichel, 1939: 596; D'Abrera, 1971: 244; 1977: 244.

MALE, FEMALE. *Upperside.* Similar to *P. g. galaxia*, but with pale markings yellower, submarginal spots larger. Hindwing admarginals often extended beyond cell M_1. *Underside.* As in *P. g. galaxia*, but forewing with larger submarginal spots. Hindwing with generally broader discal band.

SIZE. ♂; $\bar{x}$ = 46·5, s = 1.3 (7 specimens). ♀; $\bar{x}$ = 55·9, s = 1·8 (9 specimens).

DISTRIBUTION. **Sermata. Damar.** 7 ♂, 9 ♀.

TYPE-MATERIAL. Described from an unspecified number of specimens, two males and three females of which are now in the BMNH, and bear the following labels; 'Dammer Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285'. In addition one male bears the following labels; 'Lectotype (purple) / Eulepis pyrrhus antigonus Fruhstorfer LECTOTYPE det. R. L. Smiles 1978', and is here designated lectotype. The remaining male and three females also bear the following labels; 'Paralectotype (blue) / Eulepis pyrrhus antigonus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. There are records in the BMNH for November and December.

Polyura galaxia babberica (Fruhstorfer)

(Fig. 104)

Eulepis pyrrhus babbericus Fruhstorfer, 1903: 93. LECTOTYPE ♀, BABAR (BMNH), here designated [examined].
Eriboea pyrrhus babbericus (Fruhstorfer) Fruhstorfer, 1914: 727; Talbot, 1920: 406.
Polyura pyrrhus babbericus (Fruhstorfer) Stichel, 1939: 596; D'Abrera, 1971: 244; 1977: 244.

MALE, FEMALE. *Upperside.* Similar to *P. g. antigonus*, but hindwing with smaller submarginal spots, and admarginals not extending beyond cell M_1. *Underside.* As in *P. g. antigonus.*

SIZE. ♂; 1 specimen only, 49·2. ♀; 3 specimens only, 52·1, 59·9, 56·7.

DISTRIBUTION. **Babar.** 1 ♂, 3 ♀.

TYPE-MATERIAL. Described from two females in the Fruhstorfer collection. Both these specimens are now in the BMNH, and bear the following labels; 'Type / Babber Fruhstorfer.'. In addition one female bears the following labels; 'Lectotype (purple) / Adams Bequest. B.M. 1912–399 / Eulepis pyrrhus babbericus Fruhstorfer LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The remaining female also bears the following labels; 'Paralectotype (blue) / Fruhstorfer Coll. B.M. 1937–285. / Eulepis pyrrhus babbericus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1978'.

Polyura galaxia seitzi (Rothschild)

(Figs 15, 30)

Charaxes pyrrhus seitzi Rothschild, 1897: 508. Holotype ♀, TANIMBAR Is. (BMNH) [examined].
Eulepis pyrrhus seitzi (Rothschild) Rothschild & Jordan 1898: 585, Pl. 5, fig. 1.
Eriboea pyrrhus seitzi (Rothschild) Fruhstorfer, 1914: 728.
Eriboea sempronius seitzi (Rothschild); Talbot, 1920: 406.
Polyura pyrrhus seitzi (Rothschild) Stichel, 1939: 601.
Polyura jupiter seitzi (Rothschild); D'Abrera, 1971: 245. 1977: 245.

MALE, FEMALE. *Upperside.* Forewing submarginals much smaller than those of any other subspecies, often not complete. Disco-basal patch very much smaller, taking up approximately half the inner margin. Pale areas of upperside similar in colouring to those of *P. g. galaxia. Underside.* Ground colour dark grey-brown, much darker than any other subspecies. Forewing with MI and MII absent from cells Cu_{1a} and Cu_{1b}. Hindwing postdiscal spots in cells R_5 and M_1 darker than those of other subspecies, but still differentiated from those in cells R_1, M_2, M_3, Cu_{1a} and Cu_{1b}.

SIZE. ♂; $\bar{x}$ = 45·6, s = 2·0 (12 specimens). ♀; $\bar{x}$ = 54·8, s = 2·3 (12 specimens).

DISTRIBUTION. **Tanimbar Is.**: Larat; Sera (Rothschild, 1897: 508), [Sjerra] (Rothschild & Jordan, 1898: 585), [Mt Kuhlmann] (Rothschild, 1897: 508); South Jamdena, 32 km (20 miles) N. of Saumlaki; Selaru. 12 ♂, 12 ♀.

TYPE-MATERIAL. Described from a female holotype, two male and two female paratypes, all now in the BMNH, which bear the following label 'Rothschild Bequest B.M. 1939–1.'. The holotype also bears the following labels; 'Holotype (red) / Selaru, Tenimber Islands. / Ch. pyrrhus seitzi Rothsch. Type 1. N.Z. 97 / Charaxes pyrrhus seitzi Rothschild. HOLOTYPE det. R. L. Smiles 1975'. The remaining paratypes all bear the following labels; 'Paratype (yellow) / Charaxes pyrrhus seitzi Rothschild PARATYPE det. R. L. Smiles 1975'. In addition one male bears the following label; 'Selaru III 97 W. Doherty.', a further male, 'Selaru, Tenimber.', and two females 'Tenimber, June–July. 1892, W. Doherty.'.

BIONOMICS. Recorded as flying from March to July (Fruhstorfer, 1914: 728). There are records in the BMNH for February, March, April to May, June to July and November to March.

Polyura sempronius (Fabricius) **stat. rev.**

(Figs 105, 106, Map 1)

Papilio sempronius Fabricius, 1793: 62.
Eriboea pyrrhus sempronius (Fabricius) Fruhstorfer, 1914: 728, pl. 134d.
Eriboea sempronius (Fabricius); Talbot, 1920: 406.
Polyura pyrrhus sempronius (Fabricius) Burns & Rotherham, 1969: 70, fig. 51.

MALE, FEMALE. *Upperside.* Ground colour black. Forewing with all markings cream. Submarginal spots complete, those of cells Cu_{1a} and Cu_{1b} very often continuous with disco-basal patch which extends to the wing base, fills the discal cell and also incorporates the discal spots in cells M_2 and M_3. Postdiscal spots in cells R_5 and M_1 elongated and of similar size. Hindwing admarginals glaucous, often suppressed in cells R_1 and R_5, that of cell Cu_{1b} mostly orange. Submarginal spots complete, white, often becoming glaucous towards tornus. Disco-basal patch cream, extending to base, well-defined distally at costal margin, otherwise becoming glaucous distally and less well-defined. *Underside.* Ground colour light brown becoming slightly greenish towards external margins. Forewing submarginal spots off-white and complete, normally running into one another. Proximal to these runs an erratic black line from the costal to the inner margins, outlining the distal edge of the off-white discal patch which extends into the discal cell between MII and DII and upwards beyond the end of the discal cell. Postdiscal off-white patch from vein M_2 to costal margin proximally delineated by MI. MI in cell M_2 running into MI in cell M_3 and fused with DI at the end of the discal cell. MII present in discal cell and often in cell M_3, DII in discal cell forms a thick, waisted, black bar. MI and MII only rarely present in cell Cu_{1a}, never in cell Cu_{1b}. Hindwing admarginals orange, blue at veins, this colour also extending into tails. Submarginal spots complete; black surrounded by blue scales, joined proximally to a series of white spots. Postdiscal lunules brick-red in cells M_3, Cu_{1a} and Cu_{1b}, partly so in cells R_1 and M_2, delineated proximally by lilac scales, and the whole enclosed proximally and distally by black lines. Those of cells R_5, M_1 and partly R_1 and M_2 similar, but the brick-red suppressed and the distal black largely replaced with lilac. Discal band off-white, commencing on costal margin and tapering to end in cell Cu_{1a}, proximally delineated by MI which turns in a zigzag manner through ninety degrees to end on the inner margin. MII runs from the costal margin to end on the cubitus. A white line running proximally to MII extends beyond it to end in cell Cu_{1b}. Veins 2A and 3A strongly overlayed with black lines. Cells 2a and 3a sometimes off-white, but more often grey-brown.

Abdomen cream above, brown, sometimes off-white, beneath.

RANGE. Coastal Australia and up to 480 km inland from Northern Territory east and south to South Australia and Lord Howe Island.

Polyura sempronius sempronius (Fabricius)

(Figs 105, 106)

Papilio sempronius Fabricius, 1793: 62. Syntype(s) (sex?), [AUSTRALIA] (untraced) [not examined].
Nymphalis sempronius (Fabricius) Godart, 1824: 354; Westwood, [1850]: 309; Kirby, 1871: 271.
Jasia australis Swainson, [1833]: 114, pl. 114. Holotype (sex?), AUSTRALIA (untraced) [not examined].

Charaxes sempronius (Fabricius) Doubleday, 1844: 110; Butler, 1866: 633; Edwards, 1889: 13; Illidge, 1898: 95; Beutenmüller, 1901: 151; Rainbow, 1907: 85, figs 49–54, 88; Froggat, 1907: 217.
Charaxes tyrtaeus Felder & Felder, 1859: 399, pl. 9, fig. 3. LECTOTYPE ♀, [AUSTRALIA] ('India') (BMNH), here designated [examined].
Eulepis pyrrhus sempronius (Fabricius) Rothschild & Jordan, 1898: 593, figs 35, 35a, 35b, pl. 13, figs 3, 4, pl. 14a, figs 37, 38; Waterhouse & Lyell, 1914: 51, pl. 5, fig. 41.
Eriboea pyrrhus d.s.f. *australis* (Swainson) Fruhstorfer, 1914: 728.
Eriboea pyrrhus tyrtaeus (Felder & Felder) Fruhstorfer, 1914: 728.
Polyura pyrrhus sempronius (Fabricius) Stichel, 1939: 596; Harslett, 1965: 108; McCubbin, 1971: 42, figs; D'Abrera, 1971: 244, figs; 1977: 244, figs; Common & Waterhouse, 1972: 277, pl. 29, fig. 1; Quick, 1974: 67, 69; Atkins, 1975: 132; Smart, 1976: 219, fig. 20; Hatch, 1977: 55, figs 1, 2; Brunet, 1977: 47; Daniels & Moulds, 1977: 50; Fisher, 1978: 162, figs 55, 56; De Baar, 1979: 88.
Polyura pyrrhus sempronius f. *australis* (Swainson) Stichel, 1939: 598.
Polyura pyrrhus tyrtaeus (Felder & Felder) Stichel, 1939: 598.
Eriboea pyrrhus sempronius (Fabricius); Manski, 1960: 70.
Polyura pyrrhus (Linnaeus); Slater & Slater, 1974: [12, 13], figs.

MALE, FEMALE. *Upperside.* Admarginal band at tornus contains a strongly orange patch. *Underside.* Forewing with DII in discal cell broad. Hindwing submarginal black spots and orange admarginals very strongly marked.

SIZE. ♂; $\bar{x} = 45{\cdot}1$, $s = 2{\cdot}7$ (40 specimens). ♀; $\bar{x} = 53{\cdot}9$, $s = 3{\cdot}0$ (40 specimens).

DISTRIBUTION. **Australia.** Western Australia: Roebourne; Yampi Sound (Common & Waterhouse, 1972: 277); Careening Bay; Pt Nelson (Swainson, [1833]: 114). Northern Territory: Darwin; Roper R. (Waterhouse & Lyell, 1914: 51); Groote Eylandt. Queensland: Thursday Is.; Ingham; Mackay (Waterhouse & Lyell, 1914; 51); Mitchellin (Common & Waterhouse, 1972: 277); Cedar Bay; Cooktown; Kuranda; Cairns; Rockingham Bay; Davenport; [Burdelain R.]; Dawson Distr.; Moreton Bay; Brisbane; Cape York. New South Wales: Richmond R.; Manning; Tuncurry (Waterhouse & Lyell, 1914: 51); Leeton (Common & Waterhouse, 1972; 277); Warrumbungle National Park (Daniels & Moulds, 1977: 50); Sydney; Narrabeen; Nowra; Killara. Victoria: Beaumaris; Benalla; Bogong; Dimboola; Glen Waverly; Heidelberg; Melbourne City; Stanhope; Viewbank; Wail; Warrandyte; Yan Yean (Quick, 1974: 69). South Australia: Adelaide (Quick, 1974: 67); Whyalla; Underdale; St Peters; Belvue (Hatch, 1977: 61). 42♂, 52♀.

This butterfly seems only recently to have reached Victoria and South Australia, no records having appeared before 1972.

TYPE-MATERIAL. *Charaxes tyrtaeus* Felder & Felder was described from an undisclosed number of specimens represented in the BMNH by two females which bear the following labels; 'India septentr. Type / Felder Colln. / FELDER'S TYPE. / Rothschild Bequest B.M. 1939–1.'. In addition, one female bears the following labels; 'Lectotype (purple) / Charaxes tyrtaeus Felder & Felder LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The remaining female also bears the following labels; 'Paralectotype (blue) / Charaxes tyrtaeus Felder & Felder PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. This species has been described as uncommon, becoming more so towards '. . . the southern limits of its range.' (Common & Waterhouse, 1972: 277). McCubbin (1971: 45) reports that it is quite common around Sydney, and Brunet (1977: 47) describes its status as common in Adelaide.

Edwards (1889: 13) notes 'the *Charaxes* [*sempronius*] as it alights upon a bunch of the beautiful and sweet-scented flowers of *Bursaria spinosa* closes its wings with a grating sound not unlike that of *Prepona*, and repeats the same as it is disturbed from its resting place'. The butterfly is attracted by the fermenting sap exuded by shrubs (Waterhouse & Lyell, 1914: 51). Indeed, Fruhstorfer (1914: 728) notes that it often flies in orange plantations, but gives the reason as being '. . . in order to fly across them and to escape into the woods.', whereas a more likely explanation is that the butterfly is lured by the exuding sap of the orange trees. The butterfly has been taken on the sap of *Polygala myrtifolia* (Brunet, 1977: 47).

The flight period is '. . . throughout the year in the north; October to May in the South'. (McCubbin, 1971: 42). In the BMNH there are records for January, February, March, November and December.

P. sempronius sempronius in Queensland has been observed hill-topping between 10.00 and 16.00 hrs, occupying the treetops higher than 3 m from the ground (Atkins, 1975: 132).

EARLY STAGES. Eggs are laid singly on the upper surface of a leaf of the foodplant. They are spherical, yellowish green, mottled red-brown towards the apex, and '. . . delicately reticulated with longitudinal ribs and fine striae' (Rainbow, 1907: 85), and are about 2 mm in diameter (McCubbin, 1971: 45).

The first instar larva has two pairs of black horns on the head and is yellowish green. The subsequent instars (2–5) have short projections, one pair between the most dorsal pair of horns, one each between the dorsal and dorso-lateral horns (Common & Waterhouse, 1971: 278), and one projection on each side of the head beneath the dorso-lateral horns. The mature larva is granulated with white, each granule being associated with a minute 'hair'. The colour is predominantly green or bluish green with a yellowish lateral line. The tail is bifid and pinkish or bluish. Normally the third and fifth segments of the abdomen each has a transverse yellow lunule edged anteriorly with purple or a black line containing tiny blue spots. In some cases similar markings are found on other segments. The head is rough, dull green, yellowish and bluish at the sides (Common & Waterhouse, 1971: 278; Rainbow, 1907: 85).

Pupa smooth, often shiny, green or bluish green with irregular white markings on wings and a pair of white lines on the dorsal part of the abdomen. The insect normally suspends itself from the foodplant (Common & Waterhouse, 1971: 278).

Illustrations of the head capsules of the five larval instars are provided by Common & Waterhouse (1972: pl. 27, figs 1–5); of the egg, first, second, third, mature larvae and the pupa can be seen in Fisher (1978: figs 55, 56); colour illustrations of the larva and pupa are to be found in McCubbin (1971: 42 & 43) and Slater & Slater (1974: [12]); and colour photographs of the emergence of the imago from the pupa in D'Abrera (1971: 24, 25; 1977: 24, 25).

Recorded food plants are: *Acacia decurrens*, *A. maidenii*, *A. baileyana*, *A. dealbata*, *A longifolia*, *A. podalyriifolia* (Common & Waterhouse, 1972: 278), *A. neriifolia* (Harslett, 1965: 108), *A. spectabilis*, *Caesalpinea ferrea* (De Baar, 1979: 88), *Robinia pseudacacia* (Rainbow, 1907: 89), *Delonix regia*, *Cassia surrattensis* (Manski, 1960: 70), *C. fistula* (Illidge, 1898: 95), *C. javanica* (McCubbin, 1971: 42), *C. alata*, *Albizia celtis* (Common & Waterhouse, 1972: 278), *A. lebbeck* (Manski, 1960: 70) (Leguminosae), *Brachychiton populneum* (Harslett, 1965: 108), *B. acerifolium* (Manski, 1960: 70) (Sterculiaceae), *Cinnamomum camphora* (Common & Waterhouse, 1972: 278) (Lauraceae), *Lagerstroemia indica* (Lythraceae), *Celtis panicula*, *C. philippinensis*, *C. sinensis* (Ulmaceae), and climbing roses (Rosaceae) (Manski, 1960: 70).

Polyura sempronius tiberius (Waterhouse)

Eulepis pyrrhus tiberius Waterhouse, 1920: 468. Holotype ♀, LORD HOWE I. (AM, Sydney) [colour transparencies of upper and undersides examined].

Polyura pyrrhus tiberius (Waterhouse) Stichel, 1939: 598; Peters, 1969: 64; Smithers, 1970: 378; Common & Waterhouse, 1972: 278.

MALE, FEMALE. *Upperside.* Darker yellow than *P. s. sempronius*, the orange tornal patch less prominent in the hindwing. *Underside.* Forewing paler than in *P. s. sempronius*, dark bar across the middle of the discal cell (DII) narrower. Hindwing discal band larger, brick-red postdiscal lunules smaller. Black submarginal spots faint and the orange-brown admarginals very pale.

DISTRIBUTION. **Lord Howe I.**: Transit Hill; Anderson Road (Smithers, 1970: 378). 1 ♂ (CSIRO, Canberra).

TYPE-MATERIAL. Described from a single female.

BIONOMICS. Has been recorded as flying during February, March, April and December (Peters, 1969: 64), and during November (Smithers, 1970: 378).

Polyura dehanii (Westwood)

(Figs 15, 31, 114, 115)

Nymphalis dehanii Westwood, [1850]: 308.

Charaxes kadenii Felder & Felder; Wood, 1877: 618, fig. 357.

Eulepis kadeni (sic) (Felder & Felder) Rothschild & Jordan, 1898: 598, figs 37, 38.
Eriboea dehaani (sic) (Westwood) Fruhstorfer, 1914: 726, pl. 137a; Roepke, 1932: 96, fig. 169.
Charaxes dehaani (sic) (Westwood) Roepke, 1938: 353, pl. 36, fig. 6.
Polyura kadenii (Felder & Felder) Stichel, 1939: 592.

MALE, FEMALE. *Upperside.* Ground colour black with a diffuse cream-yellow discal patch, blue-grey at the peripheries, which reaches from M_2 to the inner margin. A diffuse spot of like colour surmounts this in cell M_1. Hindwing with a similar cream-yellow patch which extends to the wing base. Admarginals metallic blue, extending into tails which are strongly curved and 'caliper-like', interrupted in cell Cu_{1b} by a deep yellow spot. A submarginal white transverse bar present in cells R_5, M_1 M_2 and M_3; vestiges of similar markings may be found in cells Cu_{1a} and Cu_{1b}. Underside ground colour white, ochreous green distally. Forewing with MI, MII, DI, DII and ocelli present. Hindwing with MI and MII present, joining at the junction of Cu_{1b} and the cubitus. This turns sharply in cell Cu_{1b} and terminates on the anal margin. Proximal to this band cells Cu_{1b} and 2A are densely speckled with black. Postdiscal spots are lunar, maroon, proximally bordered with structural blue and black scales in that order. The distal, maroon component is completely suppressed in cells R_1, R_5 and M_1. Outer margin similar to upperside but white transverse bars more complete and with a yellow spot interrupting the structural blue of EI in cells M_3 and Cu_{1a} in addition to that in cell Cu_{1b}. EI suppressed in cells R_5, M_1 and M_2.

Polyura dehanii dehanii (Westwood)

(Figs 16, 31, 114)

Nymphalis dehanii Westwood, [1850]: 308. Syntype[s] (sex?), [JAVA] (probably in MNHN, Paris) [not examined].
Charaxes kadenii Felder & Felder, 1860: 232, pl. 3, fig. 2; Wallace, 1869: 178, fig.; Butler, 1895: 386. LECTOTYPE ♂, [JAVA] (BMNH), here designated [examined].
Nymphalis kadenii (Felder & Felder) Kirby, 1871: 271.
Eulepis kadenii (Felder & Felder) Moore, [1896]: 263.
Charaxes kadeni (sic) Felder & Felder; Fruhstorfer, 1897: 236.
Eulepis kadeni kadeni (sic) (Felder & Felder); Rothschild & Jordan, 1898: 599, fig. 37.
Eriboea dehaani dehaani (sic) (Westwood) Fruhstorfer, 1914: 726, pl. 135a; Roepke, 1932: 96, fig. 169.
Charaxes dehaani dehanni (sic) (Westwood) Roepke, 1938: 353, pl. 36. fig. 6.
Polyura kadenii [*kadenii*] (Felder & Felder) Stichel, 1939: 592.
Polyura dehaanii (sic) (Westwood) Stichel, 1939: 593.

MALE, FEMALE. *Underside.* Forewing with postdiscal spots strongly marked in each cell from costal margin to cell Cu_{1b}.

SIZE. ♂: $\bar{x} = 44{\cdot}1$, s = 1·1 (43 specimens). ♀; 3 specimens only, 50·8, 48·0, 49·1.

DISTRIBUTION. **Java**: Sukabumi; Mt Gede, Tjibadas. 43 ♂, 3 ♀.

TYPE-MATERIAL. *Nymphalis dehanii* Westwood was described from an unspecified number of specimens of unstated sex in the 'Jardin des Plantes'. The specimen or specimens are presumably now in the MNHN, Paris.

Charaxes kadenii Felder & Felder was described from an undisclosed number of specimens from Java. One male in the BMNH bears the following labels; 'Lectotype (purple) / Coll. Kaden. / Godman—Salvin Coll. 94–187. / B.M. TYPE No. Rh. 10433. Charaxes kadenii ♂ Feld. / Charaxes kadenii Felder & Felder LECTOTYPE det. R. L. Smiles 1978', and is here designated lectotype.

BIONOMICS. There are records for this butterfly in the BMNH during March–April, March–May, August and September, between 600 and 1300 m.

Polyura dehanii sulthan (Hagen)

(Fig. 115)

Charaxes kadeni (sic) Felder & Felder; Honrath, 1892: 4.
Charaxes (*Eulepis*) *kadenii* Felder & Felder; de Nicéville & Martin, 1896: 434.

Charaxes kadenii var. *sulthan* Hagen, 1896: 184. LECTOTYPE ♂, SUMATRA (BMNH), here designated [examined].
Charaxes kadenii var. *sumatrana* Hagen, 1896: 184. Syntypes (sex?), SUMATRA (probably in Landessammlungen für Naturkunde, Karlsruhe) [not examined]. [Synomymized with *Polyura kadenii sulthan* (Hagen) Stichel, 1939: 593.]
Eulepis kadeni (sic) *sulthan* (Hagen) Rothschild & Jordan, 1898: 600, fig. 38.
Eriboea dehaani (sic) *sulthan* (Hagen) Fruhstorfer, 1914: 726.
Polyura kadenii sulthan (Hagen) Stichel, 1939: 593.

MALE, FEMALE. *Underside*. Forewing with postdiscal spots strongly marked from cells R_4 to M_3, those in cells Cu_{1a} and Cu_{1b} very faint.

SIZE. ♂; $\bar{x} = 43{\cdot}0$, $s = 1{\cdot}4$ (23 specimens). ♀; 1 specimen only, 45·8.

DISTRIBUTION. Sumatra: [Gaju Districts; Battak Plateau] (Fruhstorfer, 1914: 726); Sungaikumbang, Kerintji; [Bng. Proepoe, Pad. Bovenland]; Padangpandjang; Sinabung, 23♂, 1♀.

TYPE-MATERIAL. No holotype of *Charaxes kadenii* var. *sulthan* Hagen was selected from the original type-series. One male from this series is in the BMNH and bears the following labels; 'Lectotype (purple) / Type Charaxes Kadeni Feld. var Sulthan Hag. Iris Julilaft. 96. Hochebene von Tobah Dele. / Levick Bequest B.M. 1941–83 / Charaxes kadenii sulthan Hagen LECTOTYPE det. R. L. Smiles 1978', and is here designated lectotype.

BIONOMICS. There are records in the BMNH for this butterfly during April, June, September–October, and September–December at altitudes between 500 and 1600 m. It is also recorded as having been taken . . . 'on the faeces of Karbouw buffaloes, deposited on the sandy river beds where the buffaloes used to drink' (de Nicéville & Martin, 1896: 434).

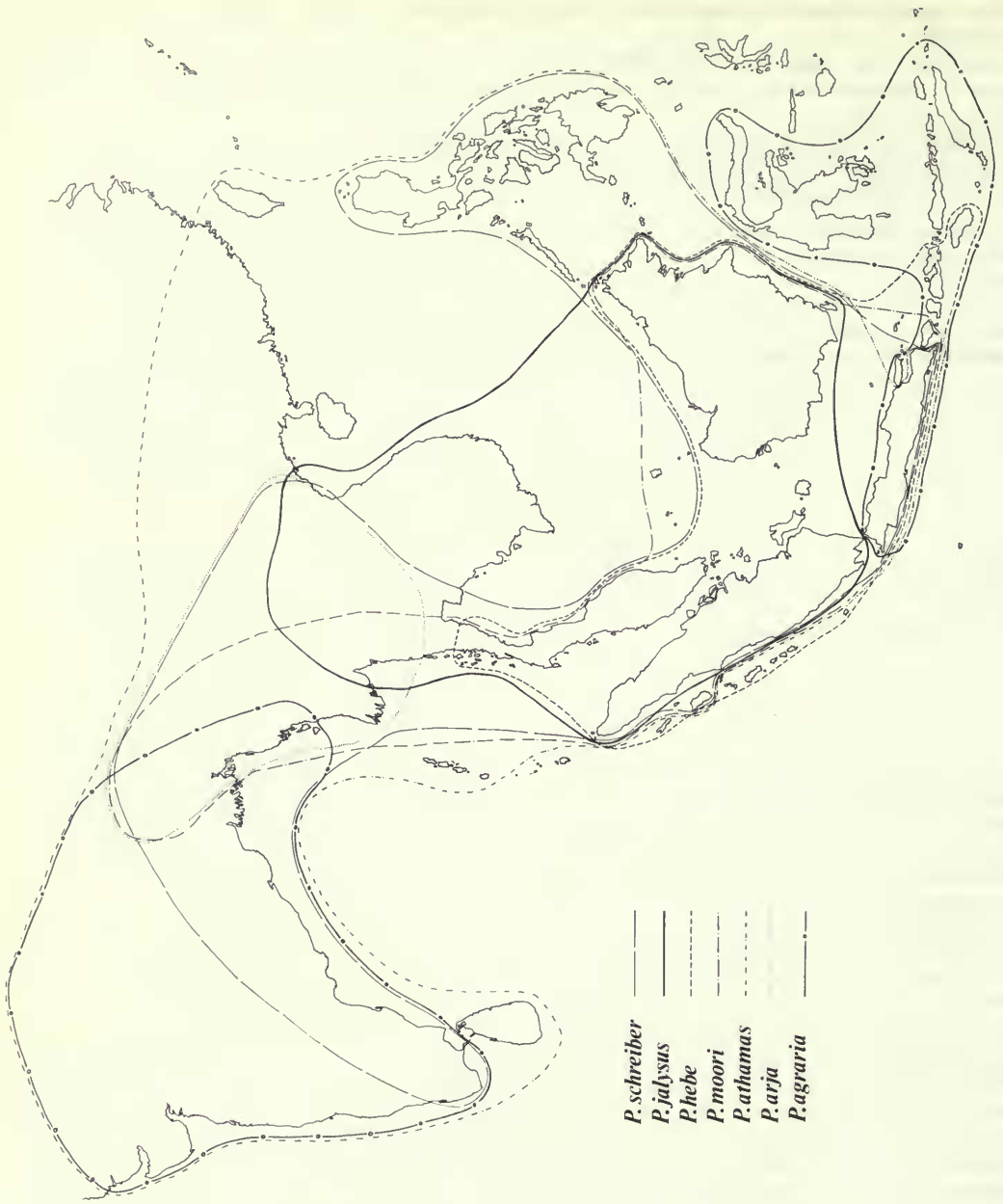
Polyura cognata (Snellen van Vollenhoven)

(Figs 43, 59)

Charaxes cognatus Snellen van Vollenhoven, 1861: 159, pl. 9, figs 1, 2; Staudinger, 1886: 173. Holotype♂, MOLUCCAS (RNH, Leiden) [examined].
Nymphalis cognatus (Snellen van Vollenhoven) Kirby, 1871: 271.
Eulepis cognatus (Snellen van Vollenhoven) Rothschild & Jordan, 1898: 595, fig. 36; Cockayne, 1924: 11.
Eriboea cognatus (Snellen van Vollenhoven) Fruhstorfer, 1914: 725, pl. 135a.
Charaxes (*Eriboea*) *cognatus* Snellen van Vollenhoven; Fiedler, 1914: 255, fig.
Charaxes (*Eulepis*) *cognatus* Snellen van Vollenhoven; Martin, 1924: 103.
Charaxes (*Eulepis*) *cognatus* [geographic] f. *kailicus* Martin, 1924: 105. Syntype[s] (sex?), SULAWESI (described from living specimens not subsequently collected). **Syn. n.**
Polyura cognatus (Snellen van Vollenhoven) Stichel, 1939: 591.
Polyura cognatus kailicus (Martin) Stichel, 1939: 592.

MALE. *Upperside*. Ground colour black-brown. Forewing postdiscal spots in cells R_5 to Cu_{1b} white or yellow. Discal spots in cells R_5 to 2A generally white, those in cells R_5 to M_2 sometimes yellow, and the spot in cell M_2 displaced from the others towards the discal cell. White areas in cells Cu_{1b} and 2A enlarged, united to form a short band, and surrounded by structural blue scales. Hindwing with blue admarginal streaks in cells M_1 to Cu_{1b}, that in cell Cu_{1b} interrupted by a yellow spot. Submarginal white spots present in every cell, double in cell Cu_{1b}. A white discal band is present from the costal margin and tapers to a point at vein Cu_{1b}. This band is entirely surrounded from M_1 to the tornus with structural blue scales. *Underside*. Ground colour olivaceous brown. Forewing ocelli largely obscured, MI complex proximally, enclosing white markings. Discal cell and wing bases predominantly white, the former being largely enclosed with black. Hindwing with EI and EII forming dark metallic lines enclosing yellow marginal streaks against a blue background in each cell. Postdiscal spots in cells R_1, M_3, Cu_{1a} and Cu_{1b} predominantly crimson, bordered proximally by blue structural or sometimes white scales, and the whole enclosed with a black line. The crimson part of the ocelli in cells R_5, M_1 and M_2 is obliterated. A white discal band is present which corresponds to that of the upperside, and is bordered proximally by MI. The area from MII to the wing bases almost to the tornus white, lightly speckled with black. Hindwing tails slightly curved.

FEMALE. There are no females in the BMNH, but the illustration given by Fiedler (1914: 256) shows an insect with much the same markings as the male, but with the hindwing tails more curved. Only the upperside is shown.



Map 2 Distribution of the *Polyura athamas*-group in the Indo-Australian Region.

From the description, *Charaxes cognatus* f. *kailicus* Martin falls within the range of apparently continuous variation to be found in this species which, in those examples in the BMNH, does not appear to be geographically determined.

SIZE. ♂; $\bar{x} = 46$, $s = 1{\cdot}6$ (14 specimens).

DISTRIBUTION. **Sulawesi** (Celebes): Kalawara; Pekawa; Kolawi; Pasankaju; Berg Gavalisi (Martin, 1924: 104); Manado; Buol [Bhool]; Tondano, Rambukers, Minahasa, Tanggari; Sawangan; Tolitoli; Palopo, Gulf of Boni; Maros and Tjamba ('région basse entre'); Makasar; Kintabaru, Palu. 15 ♂.

TYPE-MATERIAL. *Charaxes cognatus* Snellen van Vollenhoven was described from a single male. This holotype is in the RNH, Leiden and bears the following labels; 'Cat No. 1. / ♂ / Type / Reinw Moluque / Eulepis cognatus v. Voll type'.

Charaxes (*Eulepis*) *cognatus* f. *kailicus* Martin was described in the event of specimens from the north of Sulawesi proving different from those of the south, and was based on Martin's recollections of specimens he had seen flying when on that island.

BIONOMICS. There are records in the BMNH for capture during April, August to September, September, November and November to December. In addition, Martin (1924: 108) notes that it has been taken in March and July.

Polyura schreiber (Godart)

(Figs 44, 45, 60, 61, 107–113, Map 2)

Nymphalis schreiber Godart, [1824]: 852.
Paphia schreibers (sic) (Godart) Horsfield, 1829: pl. 6, figs 3, 3a.
Charaxes schreiberi (Godart) Distant, 1883: 104, pl. 13, fig. 2; de Nicéville, 1886: 274; Schwanwitsch, 1926: 501, pl. 2, fig. 9.
Eulepis schreiberi (Godart) Moore, [1896]: 261, pl. 188, figs 1, 1a, 2, 2a, 2b; Antram, 1924: 128, fig. 261.
Eulepis schreiber (Godart); Rothschild & Jordan, 1898: pl. 12, figs 1, 2; 1899: 220.
Eriboea schreiber (Godart) Fruhstorfer, 1914: 724, pl. 135a.
Eriboea schreiberi (Godart); Evans, 1924: 895, pl. 17, fig. F, 2, 1; Wynter-Blyth, 1957: 147, pl. 2, fig. 4, pl. 20, fig. 4.
Polyura schreiber (Godart) Stichel, 1939: 588; Corbet & Pendlebury, 1978: 212.
Polyura schreiberi (Godart); Corbet & Pendlebury, 1956: 244; Boonsong, Askins, Nabhitabita & Samruadkit, 1977: 140, pl. 68, fig. 343.

MALE, FEMALE. *Upperside.* Ground colour black, brown thinly overlayed with structural blue scales towards bases. Forewing apical and postdiscal white spots may or may not be present. Discal band white, beginning narrowly in cell M_2 and ending on the inner margin. The half of the band nearest to the inner margin is often bordered by a substantial area of structural blue scales distally, and a very small amount proximally. Hindwing admarginals blue towards veins and this extending into the tails, often with orange in the cells which is more apparent in the female than in the male. Submarginal spots small, white and normally complete. Discal band commencing on the costal margin and tapering to end in or near cell Cu_{1b}. This band bordered distally and slightly proximally with structural blue scales as in the forewing. *Underside.* Ground colour pale magenta. Forewing olive-green on outer margin. All postdiscal spots have become strongly delineated chevrons except the more posterior of the double spots in cell Cu_{1b} which has become a dense, black spot. A white discal band runs from cell R_5 to the inner margin, its dentate distal edge outlined with black lines and its proximal edge by MI—also black. DI is present at the end of the discal cell. MII runs parallel with MI, beginning on the radial vein and ending in cell Cu_{1b}. Along the distal edge of MII and the proximal edge of MI run thin structural blue lines which encompass an olive-green band. DII is represented by two small black dots which lie half way between MII and the base. Hindwing outer margin black, admarginals predominantly yellow, but blue along the veins and running into the tails. The submarginal spots have become black streaks lying proximal to the admarginals, and these are bordered proximally by a thin white band. Postdiscal lunules lie on a diffuse olive-green band, which is interrupted at cell R_5. They are crimson, bordered proximally by a thin, pale blue line, and the whole encompassed by thin black lines. MI and MII are bordered by blue scales as in the forewing, and encompass an olive-green band. Both commence on the costal margin, MII ending at the commencement of Cu_{1b} from the cubitus and MI ending in cell Cu_{1b} where it fades out, but recommences in the same cell after having turned through ninety degrees to end on the anal margin.

Abdomen black above, male off-white beneath, female black beneath.

Polyura schreiber schreiber (Godart)

(Figs 107, 108)

Nymphalis schreiber Godart, [1824]: 852. Holotype, JAVA (destroyed).
Charaxes schreiberi (Godart) Doubleday, 1844: 110.
Nymphalis schreiberi (Godart); Westwood, 1850: 309; Horsfield & Moore, 1857: 205, pl. 6, figs 3, 3a; Kirby, 1871: 271.
Eulepis schreiber schreiber (Godart) Rothschild & Jordan, 1899, 221.
Eriboea schreiber schreiber (Godart) Fruhstorfer, 1914: 725, pl. 135a; Roepke, 1932: 96, fig. 168.
Charaxes schreiber schreiber (Godart); Roepke, 1938: 352, pl. 35, fig. 4.
Polyura schreiber (Godart) Stichel, 1939: 588.

The smallest of the subspecies (see below).

MALE, FEMALE. *Upperside.* Forewing with a small, white, subapical spot in cell M_1. Discal band narrow, not normally extending beyond M_3 in male, M_2 in female. Hindwing admarginals normally partly orange in each cell from apex to tornus. White submarginal spots clearly defined.

SIZE. ♂; $\bar{x} = 38{\cdot}1$, $s = 1{\cdot}5$ (30 specimens). ♀; $\bar{x} = 44{\cdot}2$, $s = 1{\cdot}7$ (of 27 specimens).

DISTRIBUTION. **Java**: Malang distr.; Mt Gede; Bogor; Djampang Kulon; Djember, Res. Besuki; G. Tengger, Res. Pasuruan; Jakarta (Batavia); Sukabumi. 30 ♂, 27 ♀.

TYPE-MATERIAL. According to the original description the 'type' was collected by M. Marchand in Java. It was subsequently housed at Chartres where it was destroyed during the Second World War (P. Viette, pers. comm.).

BIONOMICS. Most common of all the subspecies (Fruhstorfer, 1914: 725). There are records in the BMNH for August and August to September at elevations between 400 and 1200 m. Fruhstorfer (1914: 725) states 'The butterfly occurs from the coast up to an elevation of about 1200 m. It flies swiftly and does not fear even the proximity of human beings, for I saw it flying in large gardens near Sukabumi . . .'.

EARLY STAGES. The larva when full grown is approximately 70 mm long, similar to that of *P. sempronius*. The horns are green, becoming brownish yellow at the tips. There is a white ring around the body at the junction of the head and the first thoracic segment. Fruhstorfer (1914: 724) states 'On the fifth segment, right across the back of the larva, there is a finely dotted, brownish-yellow crescent with rounded points concave towards the head; this crescent is bordered by a light greenish-yellow line and a black one following outwardly.'. However, Horsfield & Moore (1857: pl. 6, fig. 3) show two such crescents, one on the third abdominal, and one on the fifth abdominal segments. The larva, in common with most *Polyura* and *Charaxes*, spins a platform of silk on the foodplant, on which it rests, during which time the anal claspers are not used, and the posterior end of the larva is held away from the leaf (Fruhstorfer, 1914: 724).

The pupa is green with white, cloudy markings on the wings and white lines on the abdomen. The abdominal spiracles and the head are brown (Fruhstorfer, 1914: 724; Horsfield & Moore, 1857: pl. 6, fig. 3a). The pupal stage lasts approximately 13 days (Fruhstorfer, 1914: 724).

Larval food plants are: *Nephelium lappaceum* (Sapindacae), *Rourea santaloides* (Connaraceae), *Wagatea spicata* and *Cynometra cauliflora* (Leguminosae) (Fruhstorfer, 1914: 724).

Polyura schreiber wardii (Moore)

(Fig. 109)

Charaxes schreiberi (Godart); Davidson, Bell & Aitken, 1896: 257.
Eulepis wardii Moore, [1896]: 262, pl. 188, figs 2, 2a, 2b. LECTOTYPE ♂, INDIA (BMNH), here designated [examined].
Eulepis schreiber wardi Moore; Rothschild & Jordan, 1898: pl. 12, fig. 2; 1899: 222.
Eulepis schreiberi (Godart); Bell, 1909: 648, 663, pl. 1, figs 4, 4a [in part].
Eriboea schreiber wardi (Moore) Fruhstorfer, 1914: 725.
Eriboea schreiberi wardi (Moore); Evans, 1924: 895, pl. 17, fig. F2.1; 1927: 93, pl. 17, fig. F2.1.
Polyura schreiber waardi (sic) (Moore) Stichel, 1939: 588.

MALE, FEMALE. *Upperside.* Forewing with subapical and postdiscal spots absent. Discal white spots present in cells R_5 and M_1 forming a stepped continuation of the discal band. Hindwing admarginals with orange coloration variable between being present in every cell from the apex to the tornus, to being absent from all but cell Cu_{1b}.

Underside with black lines heavily marked.

SIZE. ♂; $\bar{x} = 42{\cdot}1$, $s = 2{\cdot}8$ (24 specimens). ♀; $\bar{x} = 47{\cdot}0$, $s = 2{\cdot}6$ (17 specimens).

DISTRIBUTION. **India.** Kerala: Calicut; Tellicherry, Anjirucady. Kanara: Karwar; Nilkund; [Arbail]; [Gairsoppa]; [Hatockeri]. Coorge: [Urti]. 25 ♂, 18 ♀.

TYPE-MATERIAL. Described from an undisclosed number of specimens. Two males are now in the BMNH, one of which bears the following labels; 'Lectotype (purple) / Karwar. Aitken. Pur. from E. Swinhoe. 1900–250. 9.90 / B.M. TYPE No. Rh. 10434 Eulepis wardii, ♂ Moore. / Eulepis wardii Moore LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The remaining male bears the following labels; 'Paralectotype (blue) / Moore Coll. 98–128. Karwar, N. Canara, Bombay, J. R. Bell. / B.M. TYPE No. Rh. 10435 Eulepis wardii, ♂ Moore. / Eulepis wardii Moore PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. A rare butterfly, the males of which are often found basking during the hottest part of the day on '. . . chosen trees about certain rocky peaks' (Rothschild & Jordan, 1899: 222). Fruhstorfer (1914: 725) reports that it is often found '. . . fluttering around isolated trees on rocky ledges of rocks during the hottest hours of the day.' There are records in the BMNH for January, February, March, April, September, October, November and December. Moore ([1896]: 262) records a capture at 3700 ft [1130 m].

EARLY STAGES. The adult larva, according to Moore ([1896]: 262, pl. 188, fig. 2b), is ostensibly the same as that of *P. schreiber schreiber*, the yellow crescent being found on the third abdominal segment. Rothschild & Jordan (1899: 223) observe: 'A larva, which emerged from the egg on October 25th, did not become a pupa until January 26th, and no part of this time was passed in hibernation.'

The pupa is green with lighter markings and a light line laterally connecting the abdominal spiracles, which are brown; as is the top of the head and the tail (Moore, [1896]: pl. 188, fig. 2b).

Larval food plants are: *Rourea santaloides* (Connaraceae) and *Wagatea spicata* (Leguminosae) (Davidson, Bell & Aitken, 1896: 257).

Polyura schreiber (Godart) from Andaman Is.

(Fig. 110)

FEMALE. *Upperside.* The white discal spots in cells R_5 and M_1 are displaced distally, and a subapical white spot is present in cell R_5.

SIZE. 49·85.

DISTRIBUTION. **Andaman Is.**: Port Blair. 1 ♀ (BMNH).

Polyura schreiber assamensis (Rothschild)

(Fig. 111)

Eulepis schreiberi (Godart) Moore, [1896]: 261, pl. 188, figs 1, 1a [in part].
Eulepis schreiber assamensis Rothschild, 1899: 223, fig. 39. Holotype ♂, INDIA: Khasi Hills (BMNH) [examined].
Eriboea schreiber assamensis (Rothschild) Fruhstorfer, 1914: 725.
Eriboea schreiberi assamensis (Rothschild); Evans, 1924: 895; 1927: 93.
Polyura schreiberi assamensis (Rothschild) Pinratana, 1979: 103, fig. N175a.

MALE, FEMALE. *Upperside.* Similar to *P. s. schreiber*, but discal band more dentate on its distal edge, and normally extending to M_2. *Underside.* Black markings heavy as in *P. s. wardii.*

SIZE. ♂; $\bar{x} = 41{\cdot}8$, $s = 2{\cdot}1$ (40 specimens). ♀; $\bar{x} = 46{\cdot}8$, $s = 2{\cdot}2$ (6 specimens).

DISTRIBUTION. **India.** Assam: Khasi Hills; Jaintia Hills; Shillong; Cachar; Cherrapunji; Margherita. Nagaland: Naga Hills. **Burma**: Arakan; Toungoo (Moore, [1896]: 261); Maymyo; Bilin Valley; Kawkareik, [Thingannyi]; Pyinmana Dist., edge of Karen Hills; Tavoy; Tenasserim, Victoria Point. **Thailand**: Phet Buri (Petchaburi), [Tung Luang]; Hin Lap. **Vietnam**: Chiem Hoa. 46 ♂, 6 ♀.

TYPE-MATERIAL. A male holotype, two male and one female paratypes are in the BMNH. The holotype and two male paratypes bear the following label; 'Rothschild Bequest B.M. 1939–1.' In addition, the holotype bears the labels; 'Holotype (red) / Khasias / E. schreiberi assamensis type! Rothsch. / Eulepis schreiber assamensis Rothschild HOLOTYPE det. R. L. Smiles 1975': one male paratype bears the labels; 'Paratype (yellow) / Khasia Hills Assam. / Eulepis schreiber assamensis Rothschild PARATYPE det. R. L. Smiles 1975': and one male paratype bears the labels; 'Paratype (yellow) / Jaintia Hills / Eulepis schreiber assamensis Rothschild PARATYPE det. R. L. Smiles 1975'. The female paratype bears the following labels; 'Paratype (yellow) / Shillong. Crowley Bequest. 1901–78. / Eulepis schreiber assamensis Rothschild PARATYPE det. R. L. Smiles 1975'.

BIONOMICS. A very rare butterfly (Fruhstorfer, 1914: 725). There are records in the BMNH for all months of the year except April and July at altitudes between 450 and 1900 m.

Polyura schreiber tisamenus (Fruhstorfer)

(Figs 44, 60)

Charaxes schreiberi (Godart); Butler, 1879: 539.
Eulepis schreiber malayicus Rothschild, 1899: 224 [in part].
Eriboea schreiber tisamenus Fruhstorfer, 1914: 725. LECTOTYPE ♂, SINGAPORE (BMNH), here designated [examined].
Eriboea schreiber entheatus Fruhstorfer, 1914: 725. Holotype ♂, SUMATRA (BMNH) [examined]. **Syn. n.**
Eriboea schreiber valesius Fruhstorfer, 1914: 725. LECTOTYPE ♂, SUMATRA (BMNH), here designated [examined]. **Syn. n.**
Eroboea schreiberi tisamenus Fruhstorfer; Evans, 1924: 895; 1927: 93; Corbet & Pendlebury, 1934: 178.
Polyura schreiber tisamenus (Fruhstorfer) Stichel, 1939: 590; Corbet & Pendlebury, 1978: 213.
Polyura schreiber entheatus (Fruhstorfer) Stichel, 1939: 590.
Polyura schreiber valesius (Fruhstorfer) Stichel, 1939: 590.
Polyura schreiberi tisamenus (Fruhstorfer); Corbet & Pendlebury, 1956: 246; D'Abrera, 1958: 80, figs. 1–3; Pinratana, 1979; 103, fig. N1756.
Polyura schreiberi (Godart); Lee, 1960: 226, figs. A–E.

MALE. *Upperside.* Forewing with discal band not extending beyond vein M_2 and with subapical and postdiscal spots small or absent. This tendency is perhaps less marked in the few Sumatran specimens in the BMNH (*valesius* Fruhstorfer), but is subject to much variation. Hindwing admarginals similar to *P. s. wardii.*

FEMALE. More variable than male—similar to that of *P. s. assamensis.*

Eriboea schreiber entheatus Fruhstorfer and *Eriboea schreiber valesius* Fruhstorfer both fall within the range of variation exhibited by a more representative series of *P. s. tisamenus* than was available to Fruhstorfer.

SIZE. ♂; $\bar{x} = 43{\cdot}0$, $s = 1{\cdot}3$ (19 specimens). ♀; $\bar{x} = 48{\cdot}4$, $s = 1{\cdot}1$ (11 specimens).

DISTRIBUTION. **West Malaysia**: Langkawi Islands (Morishita, 1968: 62, fig. 9). Perak, Kinta; Malacca, Tanjong Malim; Penang. **Singapore**: Queen Astrid Park. **Sumatra**: [Padang Bovenland]; [Kandg. Ampat, Pad. Benedenl]; Gajo Mts; Lebongtandai. **Bangka I. Belitung I.** 19 ♂, 11 ♀.

TYPE-MATERIAL. *Eriboea schreiber tisamenus* Fruhstorfer has the type-series in the BMNH represented by two males which bear the following labels; 'E. Museo Singapore H. Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285'. In addition one male bears the following labels; 'Lectotype (purple) / Type / Eriboea schreiber tisamenus Fruhstorfer LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The remaining male bears the additional labels; 'Paralectotype (blue) / Eriboea schreiber tisamenus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1978'.

Eriboea schreiber entheatus Fruhstorfer was described from a single female. This holotype is now in the BMNH and bears the following labels; 'Holotype (red) / Billiton I. Walter / Godman-Salvin Coll. 94.–187. / Type / Eriboea schreiber entheatus Fruh. HOLOTYPE det. R. L. Smiles 1975'.

Eriboea schreiber valesius Fruhstorfer was described from an undisclosed number of specimens, one male of which is now in the BMNH, bears the following labels; 'Lectotype (purple) / W.-Sumatra H. Fruhstorfer / Type / Fruhstorfer Coll. B.M. 1937–285. / Eriboea schreiber valesius Fruhstorfer LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype.

Eulepis schreiber malayicus Rothschild was described from 15 specimens, some of which must be included within the present subspecies. These are seven male and four female paratypes all of which bear the following labels; 'Paratype (yellow) / Rothschild Bequest B.M. 1939–1. / Eulepis schreiber malayicus Roths., PARATYPE det. R. L. Smiles 1975'. In addition two females bear the additional label; 'Penang, 21.I.99. (Curtis)', one male; 'Penang, 10.I.98. (Curtis).', one male; 'Penang, 16.I.99. (Curtis)', one female the following labels; 'Malacca Interior Castelnau / Felder Colln.', one male and one female the label; 'Malay. Pen.', one male; 'Gayoe, Sumatra. Jan. 92 (Hagen).', one male; 'Banka (Hagen).', and one male; 'Banka., 91. (Dr. Hagen).'.

BIONOMICS. Corbet & Pendlebury (1934: 178) report that the butterfly is rarely seen and that sometimes the wings only are found: also that the frequency of occurrence is higher in Singapore than on the mainland. There are records in the BMNH for January, January–April, April, May and September–December.

EARLY STAGES. The ovum is approximately 2 mm in diameter, golden yellow with a concave base. After 24 hours a brown band forms on the vertical axis and the ground colour changes to greenish grey with pink and black mottling. The egg hatches in approximately five days (D'Abrera, 1958: 80).

First instar larva yellowish green, head dark red, spotted with black. Black head processes as for *P. sempronius*, but rather more curved. Approximately 5 mm long. After about nine days, when larva has reached 11 mm in length, it develops a crimson mark on the dorsum of the prothorax and mesothorax. In the second instar the colour of the lateral head processes is brown rather than black, and the body of the larva a dark bluish green dorsally and lighter green ventrally. The forked, backward pointing processes of the last abdominal segment become less prominent, and the length increases to about 15–17 mm. In the third instar the larva develops a white spot on the posterior edge of the dorsum of the third abdominal segment, and grows to about 25 mm. The fourth instar larva develops an orange fading to yellow, crescent-shaped mark, bounded by a black line on the dorsum of the third abdominal segment. On the outer periphery of this mark, small purple protuberances give a silvery sheen in certain light conditions. A white line becomes apparent on the posterior edge of the dorsum of the prothorax. Minute yellow spots can be seen over the rest of the integument. The head is pale green and the head processes are reddish brown. The larva grows to approximately 42 mm, by which time it has developed a dorsal crimson mark on the pro- and mesothorax. At this time the larva has the same appearance as the fifth instar larva which reaches a maximum length of about 67 mm. It completes pupation about twenty-four hours after suspending itself (D'Abrera, 1958: 80, figs 1, 2).

The pupa is green with faint white lines on the wing cases. The spiracles are reddish brown, the eye cases beige and the cremaster brown. It is 25 mm long and its maximum breadth is 13 mm. Pupation lasts between 12 and 14 days (D'Abrera, 1958: 80, fig. 3; Lee, 1960: 226).

Photographs of the emergence of the imago from the pupa may be found in Lee (1960: figs. A–E).

Recorded food plants are: *Nephelium lappaceum* (Sapindacae) (D'Abrera, 1958: 81), and *Adenanthera pavonina* (Leguminosae) (Lee, 1960: 226).

Polyura schreiber niasica (Butler)

(Figs 45, 61)

Charaxes niasicus Butler, 1883: 56. LECTOTYPE ♂, NIAS (BMNH), here designated [examined].
Eulepis niasica (Butler) Moore, [1896]: 263.

Eulepis schreiber niasicus (Butler); Rothschild & Jordan, 1899: 225.
Eriboea schreiber niasicus (Butler) Fruhstorfer, 1914: 725.
Polyura schreiber niasicus (Butler) Stichel, 1939: 591.

MALE, FEMALE. *Upperside.* Structural blue areas are slightly green compared with other subspecies, particularly towards the wing bases in the males. *Underside.* Ground colour off-white contrasting with pinkish beige of other subspecies. Discal band in fore- and hindwings, outer margin and submarginal area of forewing, and area just distal to the postdiscal spots of the hindwing very much more green than in other subspecies.

Size. ♂; 4 specimens only, 42·6, 38·8, 39·9, 42·3. ♀; 3 specimens only, 44·9, 42·9, 48·0.

DISTRIBUTION. **Nias**: Gunungsitoli; [Hili Madjedja]; [Kalim Bungo]; southern Nias. 4♂, 3♀.

TYPE-MATERIAL. Described from an unspecified number of males; one is now in the BMNH, bears the following labels; 'Lectotype (purple) / Isle of Nias 83·25 / B.M. TYPE No. Rh 10436. Charaxes niasicus, ♂ Butl. / Charaxes niasicus Butler LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype.

BIONOMICS. Described by Fruhstorfer (1914: 725) as very rare. In the BMNH there are only records for September.

Polyura schreiber malayica (Rothschild)

(Fig. 112)

Eulepis schreiberi schreiberi (Godart); Rothschild & Jordan, 1898: pl. 12, fig. 1.
Eulepis schreiber malayicus Rothschild, 1899: 224. Holotype ♂, SARAWAK (BMNH) [examined].
Eriboea schreiber malayicus (Rothschild) Fruhstorfer, 1914: 725.
Polyura schreiber malayicus (Rothschild) Stichel, 1939: 591.

MALE. *Upperside.* Very similar to *P. s. schreiber*, but with hindwing admarginals as in *P. s. wardii.* Male and female; forewing discal band more pronounced at vein Cu_{1b}.

SIZE. ♂; $\bar{x} = 42{\cdot}0$, $s = 1{\cdot}1$ (11 specimens). ♀; 3 specimens only, 45·5, 47·5, 47·8.

DISTRIBUTION. **Kalimantan**: Pontianak. **Sarawak**: Baram River. **Sabah**: Mt Kinabalu; Labuan; Sandakan; Lawas. 12♂, 3♀.

TYPE-MATERIAL. Described from a male holotype, eight male and six female paratypes, of which seven male and four female paratypes have already been dealt with here as *P. s. tisamenus* (see p. 162). All the remaining types bear the following label; 'Rothschild Bequest B.M. 1939–1.'. In addition the holotype bears the labels; 'Holotype (red) / Baram R., Oct. 91 A. Everett. / Eulepis schreiber malayicus Roths., HOLOTYPE det. R. L. Smiles 1975'. All the remaining paratypes bear the labels; 'Paratype (yellow) / Eulepis schreiber malayicus Roths., PARATYPE det. R. L. Smiles 1975'. Additionally one male bears the label; 'Kina Balu. N. Borneo.', one female; 'Lawas N. Borneo A. Everett', and one female the labels; 'Dist. Coll. / Borneo (Cutta).'.

BIONOMICS. In the BMNH there is only one date of capture recorded—October.

Polyura schreiber luzonica (Rothschild)

Charaxes schreiberi (Godart); Semper, 1887: 78; Casto de Elera, 1895: 272.
Eulepis schreiber luzonicus Rothschild, 1899: 225. Holotype ♂, LUZON (probably in Senckenberg Museum, Frankfurt) [not examined].
Eriboea schreiber luzonicus (Rothschild) Fruhstorfer, 1914: 725.
Polyura schreiber luzonicus (Rothschild) Stichel, 1939: 591.

MALE. *Upperside.* Pale blue scaling on distal edge of discal band of the forewing more extensive than in other subspecies. Hindwing with discal band very narrow. Pale blue scaling heavy in discal cell and very extended, reaching to vein R_5. *Underside.* Greenish median bar wider than in other subspecies. Hindwing with white discal band narrow. Yellow admarginal spots much broader than in *P. s. malayica* or *P. s. schreiber.*

DISTRIBUTION. **Philippines**: Luzon, Mariveles; Bataan; Orion (Casto de Elera, 1895: 272). I have seen no specimens.

TYPE-MATERIAL. Described from one battered male from Mariveles, Luzon in Georg Semper's collection. This holotype is now probably with the rest of Semper's Philippine material in Frankfurt.

Polyura schreiber bilarensis Jumalon

(Fig. 113)

Polyura schreiberi bilarensis Jumalon, 1975: 59, figs 23, 24. Holotype ♀, BOHOL (University of San Carlos Collection, Cebu) [not examined].

MALE, FEMALE. *Upperside.* Structural blue associated with white discal band reduced. Forewing with outer margin of discal band rather more dentate than in *P. s. schreiber*, broader in the male than in *P. s. malayica. Underside.* Forewing with triangular dark area in cells M_2 and M_3 above discal band, green as in *P. s. niasica*, not brown, but much larger than in that subspecies. Hindwing postdiscal spot in cell M_2 reduced to form a black-edged, blue spot.

SIZE. ♀; 1 specimen only, 43.4.

DISTRIBUTION. **Philippines**: Panaon I., San Francisco (Jumalon, 1975: 61); Bohol, Bilar. 1♀.

BIONOMICS. The type-series was collected during April and September. One female in the BMNH was collected during May.

Polyura schreiber praedicta Schröder & Treadaway

Polyura schreiber praedictus Schröder & Treadaway, 1980: 241, fig. 5. Holotype ♀, PALAWAN (Treadaway coll., Frankfurt-am-Main) [not examined].

FEMALE. Forewing upperside with white discal band reaching into cell M_2. White spot in cell R_5 and that in cell M_1 large and equal in size.

SIZE. ♀; 45–46 mm (Schröder & Treadaway, 1980: 241).

DISTRIBUTION. **Palawan**: Languan; Olanguan (Schröder & Treadaway, 1980: 241). I have seen no specimens.

BIONOMICS. The holotype and paratype were collected during October and January respectively.

Polyura athamas (Drury)

(Figs 17–19, 32–34, 87, 94–98, Map 2)

Papilio athamas Drury, 1770: 5, pl. 2, fig. 4.
Nymphalis athamas (Drury) Godart, [1824]: 935; Horsfield & Moore, 1858; 205, pl. 6, figs. 3, 3a; Kirby, 1871: 271.
Charaxes athamas (Drury) de Nicéville, 1886: 275; Schwanwitsch, 1926: 501, pl. 2, fig. 10.
Eulepis athamas (Drury) Rothschild & Jordan, 1898: pl. 10, figs 1–5, 7–11, pl. 11, figs 1–12, pl. 13, figs. 10, 11; 1899; 245; Bingham, 1905: 220, fig. 41; Antram, 1924: 127, fig. 260.
Eriboea athamas (Drury) Stichel, 1909: 109, pl. 61a; Fruhstorfer, 1914: 718; Evans, 1924: 895, pl. 17, fig. F.2, 2; Wynter-Blyth, 1957; 148, pl. 20, fig. 6.
Polyura athamas (Drury) Stichel, 1939: 552; Lewis, 1973: 271, pl. 150, fig. 1; Smart, 1975: 219, fig. 23.

MALE, FEMALE. *Upperside.* Ground colour black, becoming brown towards the bases of the wings. A pale green or yellowish green discal band runs down both wings commencing in the forewing on vein M_3 and tapering to a point at or around vein 2A in the hindwing. This band is narrower and far more well defined than in *P. moori* or *hebe*. A similarly coloured pale spot lies postdiscally in cell M_1 of the forewing, and distal to it, in cell R_5, there is often found another rather smaller spot. Hindwing with centres of tails blue; admarginals, where present, orange, but paler at the anal angle. A continuous row of white or pale yellow spots runs along the outer submargin. *Underside.* Ground colour pinkish brown, with olivaceous or darker

brown patches present along the outer margin of the forewing, and distal to the postdiscal lunules of the hindwing. Forewing with a continuous row of chevrons running from cells R_5 to Cu_{1b}, surmounting a dark brown patch in cell Cu_{1b}. A pale green discal band, similar in shape to that of the upperside, is surrounded by a red-brown, arcuate band which is sometimes partly ochreous, and continues into the umbra. This band is delineated towards the base of the wing by MI and MII, and surrounds a spot of similar colour to the discal band in cell M_1, which has a black line (part of MI) along its proximal edge. DI is present as a faint spot at the end of the discal cell, and DII as one or two spots lying in the discal cell. Hindwing with tails blue-centred. Admarginals yellow-orange. A double row of black and white submarginal spots are present as in *P. moori*. Postdiscal lunules similar to *P. hebe* and *moori*, but that of cell M_1 often very small indeed. Discal band shaped as that of the upperside, and of similar colour to that of the forewing. It tapers to a small, yellow-orange patch just beyond vein Cu_{1b}, as in *P. moori*, and like the forewing is bordered along its outer edge by the umbra, and along its inner edge by a red-brown, often olivaceous band delineated by MI and MII.

Abdomen brown above, buff or buff-brown beneath.

FEMALE. Differs from the male in size and in the often wider, paler discal bands on the upperside.

RANGE. From Sri Lanka, throughout India, Bangladesh, Burma, into southern China, Hainan and Taiwan, through Vietnam, Laos, probably Khmer Republic, Thailand, Western Malaysia, Singapore, Andaman Is., Sumatra, Nias, Natuna Is., Borneo, throughout the Philippines, through Java, Madura, Bali, and the Lesser Sunda Is. to Sawu, Timor, Wetar and Leti.

Polyura athamas athamas (Drury)

(Figs 17, 32, 87, 94)

Papilio athamas Drury, 1770: 5, pl. 2, fig. 4. Syntype(s) (sex?), CHINA (untraced) [not examined].
Charaxes bharata Felder & Felder, 1867: 438. LECTOTYPE ♂, INDIA (BMNH), here designated [examined].
Charaxes samatha Moore, 1879: 831. Syntype(s), BURMA (probably in Zoological Survey of India, Calcutta) [not examined].
Eulepis hamasta Moore, 1882: 238; [1896]: 256, pl. 185, figs 1, 1a. LECTOTYPE ♂, INDIA (BMNH), here designated [examined].
Eulepis athamas (Drury) Moore, 1882: 238; [1896]: 252, pl. 184, figs 1, 1a, 1b, 1c; Rothschild & Jordan, 1898: pl. 10, figs 1, 3, 9; Bell, 1909: 660, pl. D, fig. 19.
Charaxes athamas var. *samatha* Moore; Distant, 1883: 106, pl. 13, fig. 8, text-fig. 37.
Nymphalis athamas (Drury) Lang, 1884; 181.
Charaxes athamas (Drury); Elwes, 1888: 367; Manders, 1890: 526; Longstaff, 1905: 98; Kershaw, 1907: 55, pl. 2a, fig. 15.
Nymphalis athamas var. *bharata* (Felder & Felder) Robbe, 1892: 129.
Nymphalis athamas var. *samatha* (Moore) Robbe, 1892: 129.
Eulepis bharata (Felder & Felder) Swinhoe, 1893: 289.
Charaxes (*Eulepis*) *athamas* (Drury); Mackinnon & de Nicéville, 1897: 377; de Nicéville, 1902: 9.
Eulepis athamas ab. *samatha* (Moore) Fruhstorfer, 1898: 60 [in part].
Eulepis athamas hamasta Moore; Fruhstorfer, 1898: 60.
Eulepis athamas agrarius f. (temp.?) *madeus* Rothschild, 1899: 249. Holotype ♂, SRI LANKA (BMNH) [examined].
Eulepis athamas athamas (Drury); Rothschild & Jordan, 1899: 250.
Eulepis athamas athamas f. temp. *bharata* (Felder & Felder); Rothschild & Jordan, 1899: 252.
Eulepis athamas athamas f. temp. *hamasta* Moore; Rothschild & Jordan, 1899: 253.
Eriboea athamas (Drury) Stichel, 1909: 169, pl. 61a, Fruhstorfer, 1914: 718.
Eriboea athamas ab. *hamasta* (Moore) Stichel, 1909: 169, pl. 52c.
Eriboea athamas f. *bharata* (Felder & Felder) Stichel, 1909: 169; Fruhstorfer, 1914: 718, pl. 134a.
Eriboea athamas f. *hamasta* (Moore); Fruhstorfer, 1914: 718.
Eriboea athamas madeus (Rothschild) Fruhstorfer, 1914: 718; Evans, 1924: 895; 1927: 93; Woodhouse & Henry, 1942: 52, pl. 7, fig. 4, pl. 40, fig. 6.
Eriboea athamas samatha (Moore) Fruhstorfer, 1914: 719; Evans, 1927: 93, Corbet & Pendlebury, 1934: 177, pl. 12, fig. 154.
Eriboea athamas dexippus Fruhstorfer, 1914: 2; Fruhstorfer, 1915: 748. Holotype ♂, VIETNAM (MHN, Geneva) [not examined]. **Syn. n.**

Eriboea athamas athamas (Drury); Evans, 1924: 895, pl. 17, fig. F.2,2; Rhé-Philipe, 1931: 421.
Polyura athamas [*athamas*] (Drury) Stichel, 1939: 552.
Polyura athamas [*athamas*] f. *bharata* (Felder & Felder) Stichel, 1939: 555.
Polyura athamas [*athamas*] f. *hamasta* (Moore) Stichel, 1939: 556.
Polyura athamas madeus (Rothschild) Stichel, 1939: 558.
Polyura athamas samatha (Moore) Stichel, 1939: 559; Corbet & Pendlebury, 1956: 245, pl. 44, fig. 137, pl. 8, fig. 101; 1978: 212, pl. 18, fig. 8, genitalia fig. 111; Pinratana, 1979: 98, fig. N166.
Polyura athamas athamas (Drury); Hill, Johnston & Bascombe, 1978: 14.

An extremely variable subspecies.

MALE, FEMALE. *Upperside.* Subapical spot in cell R_5 variable between being absent or strongly marked. Sometimes another subapical spot is present in cell R_4. A number of names have been given to forms having discal bands of different widths. In India, Bangladesh, Burma, Thailand etc. it may be possible to fit most individuals into one of three loosely defined groups; those with a narrow band approximately as wide as the black basal area of the wing (f. *athamas*), an intermediate group with the band half as wide again (f. *bharata*), and those with the discal band wider than this (f. *hamasta*). Several authors have considered these forms to be seasonal, and this is likely. However, when an attempt is made to place specimens from Western Malaysia or Singapore into these groups they prove rather less appropriate. Hindwing admarginals normally completely obscured, sometimes only partly so. *Underside.* Ground colour pinkish buff. Shape of discal band variable.

Eulepis athamas agrarius f. *madeus* Rothschild was described in an attempt to provide seasonal form names for south Indian and Sri Lankan *P. athamas* which Rothschild & Jordan considered to be a separate subspecies from typical *athamas.*

Eriboea athamas dexippus Fruhstorfer was the name given to a supposed Vietnamese subspecies. I can see no sufficient reason for separating this form from typical *athamas.*

Charaxes samatha Moore describes a narrow banded form from Burma which approximates to f. *athamas.*

SIZE. ♂; $\bar{x} = 33{\cdot}2$, $s = 2{\cdot}1$ (40 specimens). ♀; $\bar{x} = 37{\cdot}8$, $s = 2{\cdot}9$ (40 specimens).

DISTRIBUTION. **Sri Lanka** (Ceylon): Kandy; Elahera; Belihul Oya; Wellawaya; Tangalla; Deniyaya; Haragama; Ratnapura. **India**: Tiruchirappalli (Trichinopoly); Nilgiri, Coonoor; Nilgiri, [Kalar]; Nilgiri, [Droog]; N. Kanara, Karwar; Calicut; Coorg, Mercara; Mysore, [Cubbany R.]; Hyderabad, Balaghat; [Ramandravy]; Tarapur; [P'loza]; [Khandesh]; [Kakirawa]; Poona District; Matheran; Madura, [Shambaganur]; Chani, [Chan]; N.W. Himalayas, Kumaun; N.W. Himalayas, Tons Valley, Garhwal; Khaira; Ganjam; Ranikhet; Mussoorie; Mandi; Kulu, Sultanpur; Kulu, Dharmsala; Deesa; Orissa District, Sambalpur; Chamba Valley; Nepal, [Chilimi]; Sikkim, Gangtok; Sikkim, Lachen Lachung; Sikkim, [Padong]; Sikkim, Tumlong; Sikkim, [Phedong]; Singlah; Kurseong; [Senchal]; [Troomling]; Darjeeling, [Gopaldhara]; Darjeeling, [Turkvar]; [Kalapahai]; [Pashok]; Assam, Jaintia Hills; Assam, [Sadarghat]; N.E. Assam, Dafla Hills; Assam, North Lushai; Assam, Cherrapunji; Upp. Assam, Dibrugarh; Garo Hills; Khasi Hills, Shillong; Naga Hills, Kohima; Naga Hills, Nichuguard; Naga Hills, [Jakama]; Naga Hills, Ghaspani; Naga Hills, [Kirbari]; Kamla River [Kamlang River]; Manipur, Imphal; Manipur, [Burma River]; [Buxa]; [Mylang River]. **Bangladesh**: Sylhet. **Burma**: Hukawng Valley, [Muenghi Hill Tracts]; [Hlimedet forests]; Katha; East Bhamo District; Maymyo; Northern Shan State, Gokteik; Northern Shan State, [Siam Road]; Southern Shan State, Loimwe; Nampandet, Thazi to Taung-gyi; Karen Hills, Pattechaung; Pegu; Bassein; Rangoon; Tavoy. **China**: Sichuan (Szechwan); N. of Tibet (Thibet); Yunnan, Mengtzu; T'eng ch'ung (Teng-yueh-Ting); Kowloon. **Hong Kong**. **Taiwan** (Formosa). **Hainan**: [Youboi]. **Vietnam**: Muong-Khuong; Tongking, Yen Bai; Central Tongking, Chiem Hoa; [Nam-Hou (Black River)]; Xom Giong; [Nacham]; [Bac-Kan]. **Laos**: [Muang Baw]; Cataracts of Xé Kong River (Sekong River). **Thailand** (Siam): Doi Inthanon (Doi Angka); [Klong Pong Kapo] 99.18E 16.15N; [Hue Tak So]; [Muok-Lek]; Phrae District, [Me Sai Song]; Khlong Khlung; [Khao Sabab Hill], nr Chanthaburi; Hin Lap; [Luhang Prahang]; Bangkok; Ranong; [Prauchuap Prov., Pak Tawan]. **West Malaysia**: Langkawi Is.; N. Kedah, Canglun (Changloon), [Jalan Sintok]; Penang, [Waterfall Valley]; Penang Hill; Pinang, Lakat and [Pamboo]; North Perak, Sira Chior, Pelus River; North Perak, Terong; Perak, Kinta; Perak, Sungei, Pahang Road; Perak, Cameron Highlands, [19th mstone]; Perak, Ulu Gopeng; Perak, Taiping; S. Perak, Telom; Bukit Kutu; Mr Tahan; Pahang; Selangore; Ulu Kelang; [East Pegu]; [Hot Springs, 7th mile]. **Singapore**. 728 ♂, 119 ♀.

TYPE-MATERIAL. *Charaxes bharata* Felder & Felder was described from an undisclosed number of specimens. Two males in the BMNH bear the following labels; 'FELDER COLL^{N} / Roths-

child Bequest B.M. 1939–1.'. In addition, one male bears the following labels; 'Lectotype (purple) / Darjeeling Stoliczka type / Bharata Feld / TYPE of bharata Feld. / Charaxes bharata Felder & Felder LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining male bears the additional labels; 'Paralectotype (blue) / India septent. Silhet type / Charaxes bharata Felder & Felder PARALECTOTYPE det. R. L. Smiles 1979'.

Eulepis hamasta Moore is represented in the BMNH by a male and two female syntypes. The male bears the following labels; 'Lectotype (purple) / Dharmsala 82, 23 ♂ / Eulepis hamasta Moore LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining two females are included here under *P. agraria agraria.*

Eulepis athamas agrarius f. (temp.?) *madeus* Rothschild is represented in the BMNH by a male holotype bearing the following labels; 'Holotype (red) / Kandy / N.Z.98 t.10. f.7. / Type / Rothschild Bequest B.M. 1939–1. / Eulepis athamas agrarius f. madeus Roths. HOLOTYPE det. R. L. Smiles 1977'.

Bionomics. In the BMNH there are records for the capture of this butterfly over the whole year. However, in more northerly parts of its range the flight period may be restricted. According to Elwes (1888: 367) it is '. . . common in Sikkim at low elevations from April to December.' Records in the BMNH show elevations of up to 2600 m.

An extremely fast butterfly. Lang (1864: 181) observed, 'It pitches on rocks in mid stream and flashes off again if approached. It is not common, and very difficult to capture; yet one very hot day in June I saw seven individuals sitting with closed wings, motionless, on a foul spot (by the damp sandy margin of a stream), so close together, that I might have put my hat over all of them.' Longstaff (1905: 98) observed the butterfly '. . . feeding upon human ordure'. According to one author 'The most likely haunts are rocky nullah beds where it flashes from tree to rock, frequently settling on patches of damp sand. Sometimes it flits around some favoured tree; while exuding sap and ordure of any sort is always a strong attraction' (Rhé-Philipe, 1931: 421).

Early stages. The egg is sub-globular, smooth and yellow, and is attached to the underside of the leaf (Kershaw, 1907: 55). According to Bell (1909:662) it 'is laid in a sunny place on the upper side of a leaflet'.

The larva is similar to that of *P. hebe*, and has a predominantly green head striped longitudinally with pale green. Jaws reddish. The body is dark yellowish green, ventrally paler, legs yellow. It is covered thickly with minute white tubercles. The yellow lateral line is rather variable in depth of colour, but is normally stronger towards the posterior end of the animal. Larvae may have dorsal crescent- or irregular crescent-shaped markings on the third, fifth and seventh abdominal segments, on the third and fifth segments only, or on every segment of the body. These markings are normally yellow dorsally, becoming white laterally (Moore, [1896]: 253, pl. 184, figs 1, 1a; Kershaw, 1907: pl. 2a, fig. 15; Bell, 1909: 660; Fountaine, *in litt.*). According to Moore ([1896]: 255), the last pair of legs of the larva are not used for walking. It feeds at night and, as is typical in the group, spins a platform by binding the leaflets with silk, using this to rest upon when not feeding (Bell, 1909: 662).

The pupa is very similar to that of *P. hebe*, green with diffuse white streaks, and having the spiracles and the cremaster brown (Moore, [1896]: 254, pl. 184, fig. 1a; Bell, 1909: 660; Fountaine, *in litt.*).

Recorded food plants are; *Acacia moluccana* (Woodhouse & Henry, 1942: 52), *A. catechu* (Mackinnon & de Nicéville, 1897: 377), *A. pennata*, *A. caesia* (Bell, 1909: 662), *Albizia julibrissin* (Mackinnon & de Nicéville, 1897: 377), *A. stipulata*, *A. milletti* (Fruhstorfer, 1914: 718), *A. lebbek* (Bell, 1909: 662), *Caesalpinea mimosioides* (Davidson & Aitken, 1890: 278), *C. sappan*, *C. ruga*, *C. bonducella* (Bell, 1909: 662), *Poinciana regia* (Davidson & Aitken, 1890: 278), *Adenanthera pavonica* (Wynter-Blyth, 1957: 494), *Leucaena leucocephala*, *Abarema clypearia* (Hill, Johnston & Bascombe, 1978: 14) (Leguminosae), and *Grewia* (Fruhstorfer, 1914: 718) (Tiliaceae).

Polyura athamas andamanica (Fruhstorfer)

(Fig. 95)

Eulepis athamas andamanicus Fruhstorfer, 1906: 179. Holotype ♀, Andaman Is. (BMNH) [examined].

Eriboea athamas andamanicus (Fruhstorfer) Fruhstorfer, 1914: 718; Evans, 1924: 895; 1927: 93.
Polyura athamas andamanicus (Fruhstorfer) Stichel, 1939: 556.

MALE, FEMALE. *Upperside.* Discal bands narrower than in any other subspecies. A small subapical spot is present in cell R_5. *Underside.* Ground colour pinkish brown. MI and MII of both wings heavier than in any other subspecies.

SIZE. ♂; $\bar{x} = 33{\cdot}7$, $s = 0{\cdot}5$ (7 specimens). ♀; 1 specimen only, 36·9.

DISTRIBUTION. **Andaman Is.**: Middle Andaman; South Andaman. 7 ♂, 1 ♀.

TYPE-MATERIAL. Described from a single female specimen from the Andaman Is. This holotype is now in the BMNH and bears the following labels; 'Holotype (red) / Andamanen Butler ex coll. H. Fruhstorfer / Type / Fruhstorfer Coll. B.M. 1937–285. / Eulepis athamas andamanicus Fruhstorfer HOLOTYPE det. R. L. Smiles 1977'.

BIONOMICS. In the BMNH there are capture records for June.

Polyura athamas kannegieteri (Lathy)

(Figs 18, 33)

Eulepis kannegieteri Lathy, 1913: 136. LECTOTYPE ♂, NIAS (BMNH), here designated [examined].
Eriboea athamas kannegieteri (Lathy) Fruhstorfer, 1914: 719.
Polyura athamas kannegieteri (Lathy) Stichel, 1939: 559.

MALE. *Upperside.* Discal band narrower than that of *P. a. uraeus*, but wider than in *P. a. andamanicus*. Forewing with subapical spot in cell R_5 wholly suppressed. *Underside.* Ground colour less pink than in *P. a. athamas*. Hindwing postdiscal red lunule in cell R_1 surrounded by a very dense, black area, and a similar area distal to the lunules in cells M_2, M_3 and Cu_{1a}, the red portions of which are restricted. White areas associated with postdiscal lunules very much larger.

SIZE. ♂; $\bar{x} = 33{\cdot}5$, $s = 1{\cdot}1$ (8 specimens).

DISTRIBUTION. **Nias**: [Kalim Bungo]. 8 ♂.

TYPE-MATERIAL. Described from eight males. These specimens are now in the BMNH and bear the following labels; 'Kalim Bungo M. Nias 1ste sem' 96 R. Mitschke / Ex Coll. Van de Poll. / B.M. TYPE No. Rh. 10583[-90] Eulepis kannegieteri. ♂ Lathy'. In addition one male bears the following labels; 'Lectotype (purple) / Adams Bequest, B.M. 1912–399 / Eulepis kannegieteri Lathy LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. Of the others, five bear the additional label; 'Adams Bequest. B.M. 1912–399, and two the label; 'Fruhstorfer Coll B.M. 1937–285.'. These seven specimens also bear the labels; 'Paralectotype (blue) / Eulepis kannegieteri Lathy PARALECTOTYPE det. R. L. Smiles 1979'.

BIONOMICS. Other than the type-data, and the statement 'Very scarce and local' (Fruhstorfer, 1914: 719), nothing is known.

Polyura athamas uraeus (Rothschild)

(Fig. 96)

Eulepis athamas (Drury); Rothschild & Jordan, 1898: pl. 10, fig. 8.
Eulepis athamas uraeus Rothschild, 1899: 254. LECTOTYPE ♂, SUMATRA (BMNH), here designated [examined].
Eriboea athamas uraeus (Rothschild) Fruhstorfer, 1914: 719.
Eriboea athamas faliscus Fruhstorfer, 1914: 719. Syntypes ♂, SABAH (untraced) [not examined]. **Syn. n.**
Polyura athamas uraeus (Rothschild) Stichel, 1939: 558.

MALE. Wing shape as in *P. a. athamas*. Hindwing tails rather shorter than in that subspecies. *Upperside.* Discal band wider than in *P. a. kannegieteri* or *andamanica*. Forewing with subapical spot in cell R_5 missing. Postdiscal spot in cell M_1 about the same size as that of *P. a. adamanica*, *kannegieteri*, and *acuta*. *Underside.* Ground colour pinkish brown.

Eriboea athamas faliscus Fruhstorfer was described from the lowlands of north-eastern Borneo. Specimens in the BMNH from Sabah show no essential differences from Sumatran specimens.

SIZE. ♂; $\bar{x} = 32{\cdot}7$, $s = 1{\cdot}5$ (40 specimens).

DISTRIBUTION. **Sumatra**: [Selesseh]; [Setinjak]; Palembang Dist., Bukittinggi [Fort de Kock]; Batak Mts; [Bekantschan]; [Scolak Daras]; Lubuk Sikaping; Lebongtandai; Deli; Tebing Tinggi; Padang; Padangsidempuan; Solok; Dist. Lubuk Linggau; North Kerintji Valley. **Sabah**: Sandakan; Lawas; Mt Kinabalu; [Mt Marapok, Dent Province]; Baluk [Balc]; Malaman, [Province Clarke]; Silam, Darvel Bay; Labuan; Sungai Mengalong. **Sarawak**: Bidi; R. Koyan; Baram R.; Mt Mulu; Mt Dulit; Kuching; Penank Hill. **Kalimantan**: Pengaron; Selakau; Mahakam; Pontianak; River Sintang; [Tameang Lajang]. **Natuna Is.**: Bunguran. 136 ♂.

TYPE-MATERIAL. Described from 17 males from Sumatra, 13 males from Borneo and one male from Natuna Is. Of these, all but two of the specimens from Borneo are in the BMNH and bear the following label; 'Rothschild Bequest B.M. 1939–1.' One male bears the labels; 'Lectotype (purple) / Selesseh, N.E. Sum., 18.iii.94 / Eulepis athamas uraeus Rothschild LECTOTYPE det. R. L. Smiles 1979', and is designated lectotype. All the remaining specimens are labelled; 'Paralectotype (blue) / Eulepis athamas uraeus Rothschild PARALECTOTYPE det. R. L. Smiles 1979'. Of these, eight bear the following additional label; 'Selesseh, N.E. Sum., 21.ii.94 [18.iii.94, 18.iv.93, 17.viii.93, 21.v.93, 13.viii.93, 17.vii.93, 25.vii.93] Dr. Martin.', one the label; 'Sumatra Wallace, type / FELDER COLL.^{N} / COTYPE of attalus' (see also *P. a. attalus*), two the label; 'Setinjak, W. Sumatra febr. 97 [vi-98] (Ericsson)', one; 'Palembang distr, o.s. Lat. 107 Long. 96', one; 'Fort de Kock SUMATRA', one; 'Upp. Palembang distr. Voelcker.', one; 'Battak Mts, N.E. Sum., v.94, Dr Martin.', one; 'Bekantschan, N.E. Sum., III.94. Dr Martin.', one; 'Lawas N. Borneo A. Everett.', one; 'Lawas. April 92 (A. Everett)', one; 'Kina Balu', two; 'Baram R., N. Borneo Oct. 91 (Everett).', one; 'Mt Mulu 1–4000 ft. N. Borneo Aug. Dec. 94 Hose coll.', one; 'Mt Dulit II.III.94 (Hose).', two; 'Pengaron, S. O. Borneo', and one; 'Bunguran, Natuna Is., vii.x.94 (Hose).'.

BIONOMICS. There are records in the BMNH for the entire year at altitudes between 300 and 1500 m. One specimen was captured whilst drinking at wet rocks.

EARLY STAGES. Larva green, most dorsal pair of horns twice as long as the lateral pair. Mandibles yellow. Lateral line whitish. Spiracles white. Two streak-like, whitish, transverse bands above the 'middle segments': attains a length of about 5 cm (Fruhstorfer, 1914: 719).

Pupa smooth and rounded, green, slightly glossed and shaded with white, leaving a fine green dorsal line, and two broader green lateral stripes. The wing cases are more green costally, head rather more green, back and posterior end more white. Spiracles brownish yellow. Cremaster surrounded by six glossy rufous tubercles (Fruhstorfer, 1914: 719).

Fruhstorfer (1914: 719) also states: 'After 11 days the pupa appears in the morning discoloured, the white discal band of the forewings shining plainly through; but only between 1–2 o'clock in the afternoon the imago appears.'

Food plant: *Albizia stipulata* (Leguminosae) (Fruhstorfer, 1914: 719).

Polyura athamas palawanica (Rothschild)

(Fig. 97)

Charaxes athamas (Drury); Staudinger, 1889: 81; Semper, 1892: 335.
Eulepis athamas (Drury); Rothschild & Jordan, 1898: pl. 11, figs 9, 10.
Eulepis athamas palawanicus Rothschild, 1899: 256. LECTOTYPE ♂, PALAWAN (BMNH), here designated [examined].
Eriboea athamas palawanicus (Rothschild) Fruhstorfer, 1914: 720.
Polyura athamas palawanicus (Rothschild) Stichel, 1939: 563.

MALE, FEMALE. Hindwing tails, whilst longer than those of *P. a. uraeus*, are shorter than those of *P. a. athamas* and are almost equal in length, unlike *P. a. uraeus* or *acuta*. *Upperside*. Discal band similar to *P. a. uraeus*. Forewing with subapical spot in cell R_5 absent, and postdiscal spot of cell M_1 slightly larger than in

P. a. andamanica, kannegieteri, uraeus or *acuta*. Hindwing with orange admarginals present. Submarginal white spots large. *Underside*. Ground colour pinkish brown. Outer margin of discal band of hindwing straight or only slightly concave between the costal margin and vein M_3.

FEMALE. Differs in the paler colour of the discal bands of the upperside.

SIZE. ♂; $\bar{x} = 33{\cdot}4$, $s = 1{\cdot}3$ (33 specimens). ♀; 1 specimen only, 36·0.

DISTRIBUTION. **Palawan**: Dumaran; Paragua Ridge (Semper, 1892: 335); S. Palawan. 33 ♂, 1 ♀.

TYPE-MATERIAL. Of the original five males and one female in the type-series, only one male and one female in the BMNH can be definitely ascribed to those described. Of these, the male bears the following labels; 'Lectotype (purple) / Süd Palawan / N.Z. 98. t.11, f.10 / E. ath. palawanicus Rothsch. Type! Nov. Zool. / Rothschild Bequest B.M. 1939–1. / Eulepis athamas palawanicus Rothschild LECTOTYPE det. R. L. Smiles 1979', and is here designated lectotype. The female bears the following labels; 'Paralectotype (blue) / Palawan / N.Z. 98. t.11. f.9. / Rothschild Bequest B.M. 1939–1. / Eulepis athamas palawanicus Rothschild PARALECTOTYPE det. R. L. Smiles 1979'.

BIONOMICS. Has been captured during January and August according to records in the BMNH, but most specimens are not dated. One specimen was captured on human faeces and bears the note, 'flies from July to October.

Polyura athamas acuta (Rothschild)

(Figs 19, 34)

Charaxes athamas (Drury): Semper, 1887: 79.
Eulepis athamas (Drury); Rothschild & Jordan, 1898: pl. 11, figs 7, 8.
Eulepis athamas acutus Rothschild, 1899: 256. Holotype ♂, MINDANAO (BMNH) [examined].
Eriboea athamas acutus (Rothschild) Fruhstorfer, 1914: 720.
Polyura athamas acutus (Rothschild) Stichel, 1939: 563.

MALE, FEMALE. Forewing shape as in *P. a. palawanica*, hindwing more elongate, with outer margin straighter. Posterior tail normally longer than anterior one in male. *Upperside*. Discal bands narrower than *P. a. palawanica*. In forewing, subapical spot of cell R_5 normally present. Hindwing with orange admarginals as in *P. a. palawanica*, white submarginal spots smaller than in that subspecies. *Underside*. Ground colour slightly darker than in *P. a. palawanica*. Outer margin of hindwing discal band concave between costal margin and vein M_3.

SIZE. ♂; $\bar{x} = 31{\cdot}6$, $s = 1{\cdot}3$ (18 specimens). ♀; 2 specimens only, 36·7, 36·9.

DISTRIBUTION. **Mindanao**: Sarangani (Semper, 1887: 79, Rothschild, 1899: 256); Davao. **Bohol** (Semper, 1887: 79, Rothschild, 1899: 256). **Mindoro. Luzon**: Palali, Benguet. 18 ♂, 2 ♀.

TYPE-MATERIAL. Described from a male holotype and five male and one female paratypes, now in the BMNH. The holotype bears the following labels; 'Holotype (red) / Mindanao or. Platen / E. ath. acutus Type! Rothsch. Nov. Zool. 99. / Rothschild Bequest B.M. 1939–1. / Eulepis athamas acutus Rothschild HOLOTYPE det. R. L. Smiles 1977'. The paratypes all bear the following labels; 'Paratype (yellow) / Rothschild Bequest B.M. 1939–1. / Eulepis athamas acutus Rothschild PARATYPE det. R. L. Smiles 1977'. In addition two males bear the label; 'Mindanao or. Platen', one male; 'Mindanao Davao or. 1889 Platen.', one male the labels; 'Luzon, Lorquin type. / FELDER COLL.^{N}.', one male the label; 'Mindoro', and one female; 'Mindoro. ix.94. Everett.'.

BIONOMICS. According to records in the BMNH it has been taken during December and at an altitude of 600 m, but most specimens lack such data.

Polyura athamas attalus (Felder & Felder)

(Fig. 98)

Nymphalis athamas (Drury); Horsfield & Moore, 1858: 205, pl. 6, figs 3, 3a.

Charaxes attalus Felder & Felder, [1867]: 438. LECTOTYPE ♂, Java (BMNH), here designated [examined].
Nymphalis athamas var. *attalus* (Felder & Felder) Robbe, 1892: 129.
Charaxes phrixus Röber, 1895: 64. Holotype ♀, Java (probably in MNHU, Berlin) [not examined].
Eulepis attalus (Felder & Felder) Moore, [1896]: 263.
Eulepis athamas (Drury); Rothschild & Jordan, 1898: pl. 11, figs 1, 3.
Eulepis athamas attalus (Felder & Felder); Rothschild & Jordan, 1899: 257.
Eriboea athamas attalus (Felder & Felder) Fruhstorfer, 1914: 719; Roepke, 1932: 95, fig. 166.
Eriboea athamas attalus f. *phrixus* (Röber) Fruhstorfer, 1914: 719.
Eriboea athamas phrixus (Röber); Roepke, 1932: 95.
Charaxes athamas attalus Felder & Felder; Roepke, 1938: 348, pl. 35, figs 8, 9.
Polyura athamas attalus (Felder & Felder) Stichel, 1939: 560.
Polyura athamas attalus ? f. *phrixus* (Röber) Stichel, 1939: 561.

Male, female. Wingshape as in *P. a. uraeus*, *palawanica* etc. Hindwing tails as in *P. a. palawanica*. *Upperside*. Discal bands broader than in *P. a. palawanica*, or narrower as in *P. a. uraeus*; there are intermediates. Typical *attalus* was described from a particularly wide banded specimen, and most examples have narrower bands than this (f. *phrixus*). Forewing with subapical spot in cell R_5 often present, and sometimes a further spot in cell R_4. Hindwing with orange admarginals normally present to some degree, rarely completely suppressed. *Underside*. Ground colour pinkish brown.

Size. ♂; $\bar{x} = 31{\cdot}6$, $s = 1{\cdot}1$ (40 specimens). ♀; $\bar{x} = 34{\cdot}6$, $s = 1{\cdot}0$ (12 specimens).

Distribution. **Java**: Mt Gede; Sukabumi; [Preanger], Pelabuhan Ratu; Bandung; [Plaboan]; Teluk [Wijnkoopsbaai]; Bogor; Lawang. 75 ♂, 12 ♀.

Type-material. *Charaxes attalus* Felder & Felder was described from an undisclosed number of specimens in the van der Capellen collection. One male in the BMNH can definitely be ascribed to the type-series, bears the following labels; 'Lectotype (purple) / Java Cll van d. Capell type / TYPE of attalus Feld. / FELDER COLL^{N}. / Rothschild Bequest B.M. 1939–1. / Charaxes attalus Felder & Felder LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. One specimen which has already been included in the type-series of *Eulepis athamas uraeus* Rothschild is labelled as a 'cotype' of *attalus* Felder & Felder, but I doubt that this is a syntype of *attalus* as the Felders' description states the locality Java quite clearly, whereas the aforementioned specimen was collected by Wallace in Sumatra.

Bionomics. Specimens in the BMNH have been collected during May–June and August–September at altitudes of up to 1200 m.

Early stages. The larva figured by Horsfield & Moore (1858: pl. 6, fig. 3) is very similar to that of other *P. athamas* subspecies. The crescent-shaped dorsal marks are shown on abdominal segments 3 and 5. The illustration of the pupa (Horsfield & Moore, 1858: pl. 6, fig. 3a) similarly is very like those of other *P. athamas* subspecies. Fruhstorfer (1914: 719) describes the pupa as '. . . largely green, with white wingcases and delicate white subdorsal and lateral stripes.'.

Polyura agraria (Swinhoe)

(Figs 20, 35, 83, 86, Map 2)

Charaxes agrarius Swinhoe, 1887: 425, pl. 40, fig. 3.

Very similar to *P. athamas*, differing mainly in wingshape which is more elongate in both wings. If the length of a straight line between the forewing base and apex (x) is divided by a straight line from the forewing base to the end of vein 2A (y), then $x/y = 1{\cdot}46$(♂), $s = 0{\cdot}03$, $1{\cdot}49$(♀), $s = 0{\cdot}03$, contrasted with $x/y = 1{\cdot}40$ (♂), $s = 0{\cdot}03$, $1{\cdot}42$ (♀), $s = 0{\cdot}03$ for *P. athamas*. It is possible that *P. agraria* is a form of *P. athamas*, as its distribution is split between India and Burma, and the Lesser Sunda Is., in mostly rather dry areas. The one good diagnostic character is wingshape, and if *P. agraria* from India and Burma is distinct, then specimens from the Lesser Sunda Islands can also be grouped on the same character. Were it not for the fact that seasonal forms of *P. athamas* are already well documented, I would have no hesitation in accepting its status as infrasubspecific.

RANGE. In north and south India, Burma, again in Java, Bali, through the Lesser Sunda Is. to Leti, and Sulawesi.

Polyura agraria agraria (Swinhoe)

(Figs. 20, 35)

Charaxes agrarius Swinhoe, 1887: 425, pl. 40, fig. 3. LECTOTYPE ♂, INDIA (BMNH), here designated [examined].
Eulepis agrarius (Swinhoe) Moore, 1896: 257, pl. 185, figs 2, 2a.
Eulepis athamas agrarius (Swinhoe); Fruhstorfer, 1898: 60; Rothschild & Jordan, 1899: 248; Rhé-Philipe, 1911: 757; Ormiston, 1924: 19.
Eriboea athamas agrarius (Swinhoe) Fruhstorfer, 1914: 718; Evans, 1924: 895; 1927: 93.
Polyura athamas agrarius (Swinhoe) Stichel, 1939: 557.
Polyura agrarius (Swinhoe); Fujioka, 1970: 30, pl. 12, figs 1, 2, fig. 9.

MALE, FEMALE. *Upperside.* Postdiscal spot in cell M_1, not accompanied by another in cell R_5. Subapical pale spots present in cell R_5, and normally R_4.

SIZE. ♂; $\bar{x} = 30{\cdot}3$, $s = 1{\cdot}5$ (27 specimens). ♀; $\bar{x} = 33{\cdot}5$, $s = 1{\cdot}9$ (9 specimens).

DISTRIBUTION. **India**: Tiruchirappalli (Trichinopoly); Nilgiri, Coonoor; Nilgiri, [Kalar]; Mysore, Bangalor; Hyderabad (Haldárabád), Singareni; Mhow; N.W. Himalayas, Kumaun; Kulu, Dharmsala; Orissa District, Sambalpur. **Burma**: Handauk; Heiblentaung; Mt Victoria; Chin Hills; Tilin Yaw; Yedu. 27♂, 9♀.

TYPE-MATERIAL. *Charaxes agrarius* Swinhoe is represented in the BMNH by two male and one female types. One male and one female bear the following labels; '49 Mhow. 10.81. type / Joicey Bequest Brit. Mus. 1934–120.'. In addition the male bears the following labels; 'Lectotype (purple) / Charaxes agrarius Swinhoe LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The female bears the following additional labels; 'Paralectotype (blue) / Charaxes agrarius Swinhoe PARALECTOTYPE det. R. L. Smiles 1979'. The remaining male bears the following labels; 'Paralectotype (blue) / 49 Mhow. 10.81 / 82.25 / Charaxes agrarius Swinhoe PARALECTOTYPE det. R. L. Smiles 1979'.

Eulepis hamasta Moore has already been dealt with under *Charaxes athamas athamas* where the male from the type-series has been designated lectotype. The two females are included here and bear the following labels; 'Paralectotype (blue) / Eulepis hamasta Moore PARALECTOTYPE det. R. L. Smiles 1979'. In addition one female bears the following labels; 'Dharmsala 82.23 ♀ / B.M. TYPE No. Rh. 10438, Eulepis hamasta ♀ Moore. The remaining female bears the following additional labels; 'Kulu / Dharmsala 82.23 Kulu N.W. Himalayas / B.M. TYPE No. Rh. 10439 Eulepis hamasta Moore'.

BIONOMICS. Specimens in the BMNH have been captured flying during February, March, May, July, October, November to December, and December, at elevations up to 900 m.

Polyura agraria fruhstorferi (Röber)

(Fig. 83)

Charaxes fruhstorferi Röber, 1895: 63; Fruhstorfer, 1898: 57. Holotype ♀, JAVA (BMNH) [examined].
Charaxes athamas batavianus Fruhstorfer, 1898: 57. LECTOTYPE ♂, JAVA (BMNH), here designated [examined]. **Syn. n.**
Charaxes (Eulepis) batavianus Fruhstorfer; de Nicéville & Elwes, 1898: 691 [in part].
Eulepis athamas attalus f. *fruhstorferi* (Röber) Rothschild & Jordan, 1899: 259.
Eriboea athamas attalus f. *fruhstorferi* (Röber) Fruhstorfer, 1914: 719.
Eriboea athamas fruhstorferi (Röber); Roepke, 1932: 95.
Polyura athamas attalus f. *fruhstorferi* (Röber) Stichel, 1939: 561.
Polyura athamas batavianus (Fruhstorfer) Stichel, 1939: 561.

MALE, FEMALE. *Upperside.* Very similar to *P. a. agraria*, but normally with only one subapical spot, and this in cell M_1. Occasionally another may be present in cell M_2, but not in cell R_5. Hindwing with admarginals less suppressed than in the nominate subspecies, and clearly orange.

Charaxes athamas batavianus Fruhstorfer corresponds very closely to *Charaxes fruhstorferi* Röber, and is here treated as a synonym of it.

SIZE. ♂; $\bar{x} = 30{\cdot}5$, $s = 1{\cdot}0$ (10 specimens), ♀; $\bar{x} = 33{\cdot}6$, $s = 2{\cdot}4$ (11 specimens).

DISTRIBUTION. **Java**: Jakarta [Batavia]; Bogor. **Madura.** 10 ♂, 11 ♀.

TYPE-MATERIAL. *Charaxes fruhstorferi* Röber is represented in the BMNH by a female holotype bearing the labels; 'Holotype (red) / Java merid. 1500' 1891 H. Fruhstorfer. / Fruhstorfer Coll. B. M. 1937–285. / Charaxes fruhstorferi Röber HOLOTYPE det. R. L. Smiles 1977'.

Charaxes athamas batavianus Fruhstorfer was described from eleven males and seven females, seven males and four females of which are now in the BMNH and which bear the following label; 'Batavia Java 1897 ex. coll. Fruhstorfer'. In addition, one male bears the following labels; 'Lectotype (purple) / Rothschild Bequest B.M. 1939–1. / Charaxes athamas batavianus Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining specimens all bear the additional labels; 'Paralectotype (blue) / Charaxes athamas batavianus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1979'; of these, one male and two females are labelled; 'Rothschild Bequest B.M. 1939–1.', and five males and two females; 'Fruhstorfer Coll. B.M. 1937–285.'.

Polyura agraria piepersianus (Martin) **comb. n.**

Charaxes athamas (Drury); Piepers & Snellen, 1877: 11.
Charaxes (*Eulepis*) *athamas piepersianus* Martin, 1924: 107. Holotype (sex?), SULAWESI (probably in RNH, Leiden) [not examined].

I have examined colour transparencies of a female from M. Jaques Plantrou's collection; this female seems to me to have closer affinities with specimens from the Lesser Sunda Is. (*P. agraria sumbaensis* and *alphius*) than with specimens of *P. athamas* from Borneo.

FEMALE. *Upperside.* Forewing with postdiscal spots limited to cell M_1, not present in cell R_5. Hindwing with admarginals orange and clearly marked. *Underside.* As in *P. agraria sumbaensis*, but with discal band of hindwing narrowing at cell Cu_{1b}, and then broadening out to end on the anal margin.

SIZE. ♀; 1 specimen only, approximately 37·5.

DISTRIBUTION. **Sulawesi** (Celebes): Bonthain; Allu (Piepers & Snellen, 1877: 11); Makasar (Plantrou Coll.). 1 ♀ (upper and underside photographs).

TYPE-MATERIAL. Martin's description is based on a pencil sketch which he received from R. van Eecke, of a specimen in the RNH, Leiden; one of two previously listed by Piepers & Snellen (1877: 11). According to Martin only one of those butterflies could be found, the Bonthain specimen; the other from Allu having been lost.

BIONOMICS. The female in M. Jaques Plantrou's collection was taken in May.

Polyura agraria sumbaensis (Swinhoe) **comb. n.**

(Fig. 86)

Eulepis sumbaensis Swinhoe, 1897: 408. LECTOTYPE ♂, SUMBA (BMNH), here designated [examined].
Eulepis athamas (Drury); Rothschild & Jordan, 1898: pl. 11, figs 4, 5, 6.
Eulepis athamas sumbaensis Swinhoe; Rothschild & Jordan, 1899: 260.
Eriboea athamas stratiocus Fruhstorfer, 1914: 720. LECTOTYPE ♂, LOMBOK (BMNH), here designated [examined]. **Syn. n.**
Eriboea athamas sumbaensis (Swinhoe) Fruhstorfer, 1914: 720.
Eriboea athamas menaius Fruhstorfer, 1914: 720. LECTOTYPE ♀, SUMBAWA (BMNH), here designated [examined]. **Syn. n.**
Polyura athamas stratioticus (sic) (Fruhstorfer) Stichel, 1939: 561.
Polyura athamas sumbaensis (Swinhoe) Stichel, 1939: 562.
Polyura athamas menaius (Fruhstorfer) Stichel, 1939: 562.

MALE, FEMALE. *Upperside.* Discal bands narrow, slightly wider in females. Forewing with postdiscal spot of cell M_1 often extended into cell R_5. A subapical spot is also present in cell R_5. Hindwing with orange admarginals present, extending into tails, which are not blue-centred. Proximal to this is a row of pale yellow spots which are larger than those of *P. a. alphius.* UNDERSIDE. Reddish bands which border the discal bands paler than in *P. a. athamas.* Ground colour pale pinkish brown. Hindwing with outer margin of discal band concave between the costal margin and vein M_3.

Eriboea agraria stratiocus Fruhstorfer and *Eriboea agraria menaius* Fruhstorfer may show slight differences from typical *sumbaensis* in about 50 per cent of specimens, but these are far from clear and are very inconsistent.

SIZE. ♂; $\bar{x}$ = 32·0, s = 1·3 (37 specimens), ♀; $\bar{x}$ = 35·6, s = 1·8 (22 specimens).

DISTRIBUTION. **Bali**: Buleleng district. **Lombok**: Pringgabaja; Sapit. **Sumbawa**: Tambora. **Sumba**: Waingapu. **Alor. Flores**: S. Flores. **Adonara. Pantar.** 37♂, 22♀.

TYPE-MATERIAL. *Eulepis sumbaensis* Swinhoe was described from an undisclosed number of males and two females. These are represented in the BMNH by two males and two females. One male bears the following labels; 'Lectotype (purple) / Waingapo, Pur. from E. Swinhoe. 1900–250. / 4 / Waingapo / B.M.TYPE No. Rh. 10440 Eulepis sumbaensis, ♂ Swinh. / Eulepis sumbaensis Swinhoe LECTOTYPE det. R. L. Smiles 1979', and is here designated lectotype. All the remaining specimens bear the following labels; 'Paralectotype (blue) / Eulepis sumbaensis Swinhoe PARALECTOTYPE det. R. L. Smiles 1979'. Of these one female bears the additional labels; 'Waingapo. Pur. from E. Swinhoe. 1900–250. / 4 / ♀ Waingapo / B.M. TYPE No. Rh. 10441 Eulepis sumbaensis. ♀ Swinh.'. The remaining pair bear the additional labels; '82.25 / Joicey Bequest Brit. Mus. 1934–120.'. Of these, the male also bears the label; '2422. ♂ Waingapo Sumba Isl', and the female; '41 ♀ Waingapo'.

Eriboea athamas stratiocus Fruhstorfer was described from an undisclosed number of specimens, twelve males and five females of which are now in the BMNH. Of these, one male bears the labels; 'Lectotype (purple) / Type / Lombok Pringabaja April 1896 H. Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285. / Eriboea athamas stratiocus Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is here designated lectotype. The remaining specimens all bear the labels; 'Paralectotype (blue) / Eriboea athamas stratiocus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1979'. Five males and one female bear the additional label; 'Lombok Pringabaja April 1896 H. Fruhstorfer'. Of these, one male and one female bear the label; 'Fruhstorfer Coll. B.M. 1937–285.', one male; 'ex coll. Ch. Oberthur', one male; 'Joicey Bequest. Brit. Mus. 1934–120.', and two males; 'Rothschild Bequest B.M. 1939–1.'. Four males and one female bear the additional label; 'Lombok Sapit 2000' Mai–Juni 1896 H. Fruhstorfer.'. Of these, one male bears the label; 'ex coll. Ch. Oberthur.', two males; Fruhstorfer Coll. B.M. 1937–185.', and one male and one female; 'Rothschild Bequest B.M. 1939–1.'. Two males and three females bear the additional label; 'Lombok Sapit 2000' April 1896 H. Fruhstorfer'. Of these, one female bears the label; 'ex coll. Ch. Oberthur', and two males and two females; 'Fruhstorfer Coll. B.M. 1937–285.'.

Eriboea athamas menaius Fruhstorfer was described from an undisclosed number of specimens, one female of which is now in the BMNH, and which bears the following labels; 'Lectotype (purple) / Sumbawa Tambora 1897 ex coll. Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285. / Eriboea athamas menaius Fruhstorfer LECTOTYPE det. R. L. Smiles 1979'. I designate this specimen the lectotype.

BIONOMICS. Specimens in the BMNH have been captured during February, April, May–June, September, October, November and December–March at altitudes up to 610 m. Fruhstorfer (1914: 720), referring to Lombok specimens, states that it is found '. . . from the shore to an elevation of 2,500 feet [760 metres]'.

Polyura agraria alphius (Staudinger)

(Fig. 116)

Charaxes alphius Staudinger, 1886: 172. Syntype(s) (sex?), TIMOR (probably in MNHU, Berlin) [not examined].

Eulepis athamas (Drury); Rothschild & Jordan, 1898: pl. 11, figs 11, 12.
Eulepis athamas alphius (Staudinger) Rothschild & Jordan, 1899: 261.
Eriboea athamas alphius (Staudinger) Fruhstorfer, 1914: 720.
Eriboea athamas oitylus Fruhstorfer, 1914: 720. LECTOTYPE ♂, WETAR (BMNH), here designated [examined]. **Syn. n.**
Polyura athamas alphius (Staudinger) Stichel, 1939: 562.
Polyura athamas oitylus (Fruhstorfer) Stichel, 1939: 563.

MALE, FEMALE. As in *P. a. sumbaensis* except for subapical spot in cell R_5, which is larger, and postdiscal spot in cell R_5, which is similarly larger, being at least half the size of that in cell M_1.

Eriboea athamas oitylus Fruhstorfer appears to me to fall within the range of variation exhibited by *P. a. alphius*.

SIZE. ♂; $\bar{x} = 32{\cdot}0$, $s = 1{\cdot}0$ (40 specimens), ♀; 2 specimens only, 35·6, 36·3.

DISTRIBUTION. **Sawu. Timor**: Dili; Baucau; [Bere Daoe]; Suai; [Matai]. **Wetar. Leti.** 38 ♂, 2 ♀.

TYPE-MATERIAL. *Eriboea athamas oitylus* Fruhstorfer was described from an undisclosed number of specimens represented in the BMNH by six males all bearing the label; 'Wetter Fruhstorfer'. Of these, one male bears the additional labels; 'Lectotype (purple) / Type / Fruhstorfer Coll. B.M. 1937–285. / Eriboea athamas oitylus Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining specimens bear the additional labels; 'Paralectotype (blue) / Eriboea athamas oitylus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1979'. Of these, three males bear the label; 'Fruhstorfer Coll. B.M. 1937–285.', and two males; 'Adams Bequest. B.M. 1912–399.'.

BIONOMICS. Specimens in the BMNH have been captured during January, February, March, May, August and December. One specimen was captured at 910 m.

Polyura arja (Felder & Felder)

(Figs 21, 36, 117)

Charaxes arja Felder & Felder, [1867]: 438; de Nicéville, 1886: 278; Schwanwitsch, 1926: 501, pl. 2, fig. 11. LECTOTYPE ♂, BANGLADESH (BMNH), here designated [examined].
Nymphalis athamas var. *arja* (Felder & Felder) Kirby, 1871: 271.
Charaxes (*Eulepis*) *arja* Felder & Felder; Wood-Mason & de Nicéville, 1887: 363.
Eulepis arja (Felder & Felder) Moore, [1896]: 258, pl. 186, figs 1, 1a, 1b, 1c; Rothschild & Jordan, 1899: 244.
Charaxes arja roeberi Fruhstorfer, 1898: 59. Syntypes (sex?), INDIA (probably in MNHU, Berlin) [not examined].
Eulepis arja roeberi (Fruhstorfer) Rothschild & Jordan, 1898: pl. 10, fig. 6.
Eulepis arja f. temp. *vernus* Rothschild, 1899: 244. Holotype ♂, INDIA: Sikkim (BMNH) [examined].
Eulepis arja f. temp. *arja* ab. *roeberi* (Fruhstorfer); Rothschild & Jordan, 1899: 245.
Eriboea arja (Felder & Felder) Fruhstorfer, 1914; 720; Evans, 1924: 895; 1927: 93; Wynter-Blyth, 1957:149, pl. 20, fig. 5.
Eriboea arja d.s.f. *vernus* (Rothschild) Fruhstorfer, 1914: 720, pl. 134a.
Eriboea arja w.s.f. *roeberi* (Fruhstorfer) Fruhstorfer, 1914: 720, pl. 134a.
Polyura arja (Felder & Felder) Stichel, 1939: 564; Duckworth, Watson & Whalley, 1975: 267.
Polyura arja f. *roeberi* (Fruhstorfer) Stichel, 1939: 565.
Polyura arja f. *vernus* (Rothschild) Stichel, 1939: 565.
Polyura arja arja (Felder & Felder); Pinratana, 1979: 98, fig. N167.

MALE, FEMALE. Similar in most respects to *P. athamas*, but differs from that species in the following respects: on the upperside, the colour of the discal bands is white, sometimes anteriorly pale green; the colour of the postdiscal and, if present, of the subapical spots is also white or pale green; and the distal edge of the discal band of the hindwing is strongly bordered with structural blue.

As in *P. athamas athamas*, several forms have been described. The taxon *arja* was described from specimens with discal bands of medium width corresponding with a similar form in *P. a. athamas*; the majority of specimens fall into this category. A very narrow banded form (f. *roeberi*) is in the

BMNH from Sikkim, Assam, Nagaland, Bhutan, and also from Thailand and Vietnam and flies with other forms. A third form has very broad discal bands and a large postdiscal spot (f. *vernus*).

SIZE. ♂; $\bar{x} = 35{\cdot}3$, $s = 1{\cdot}5$ (40 specimens), ♀; $\bar{x} = 39{\cdot}1$, $s = 2{\cdot}8$ (40 specimens).

DISTRIBUTION. **India**: Sikkim; Singlah; Kurseong; [Troomling]; Landour; Bhutan, [Buxa]; Darjeeling, Tista Valley; Darjeeling, [Gopaldhara]; N. Assam, Dibrugarh; Assam, Digboi; Khasi Hills; Cherrapunji; Shillong; Cachar; Manipur; Naga Hills, Kohima; Naga Hills, Nichuguard; Naga Hills, Ghaspani. **Bangladesh**: Sylhet. **Burma**: Kawkareik, [Thingannyi]; Thanbayagon [Kindah]; [Poungadaw], nr Thayetmyo; Kachin; [Kimpadia]; Tilin Yaw; Thandaung; Kalaw; East Bhamo District; Thaungyin Valley; Sadon; Northern Shan State, Wetwun; Northern Shan State, Maymyo; [Ruby Mines District]; Southern Shan State, Loimwe; Southern Shan State, [Siam Road]; Southern Shan State, Siam frontier; Karen Hills, [Chotaik]; Toungoo; Bassein; Papun, Methalauk Chaung; foot of Dawna Range; Rangoon, Kokine Lakes; Tavoy Valley; Pegu Hills; Ataran Valley, [Kyerkdon-Mitan], Tenasserim. **Thailand** (Siam): Pak Jong; Mae Wong, 99°07′E 15°55′N; Phrae District, [Me Tharn]; Mae Sariang; Hin Lap; [Muok-Lek]; [Pang Yao], 20 m. W. of Tak [Raheng]. **Vietnam**: Central Tongking, Chiem Hoa; [Nam-Hou (Black River)]; [Ko-Tich]; Van Bu; Cha Pa. 191 ♂, 63 ♀.

TYPE-MATERIAL. *Charaxes arja* Felder & Felder was described from an unspecified number of specimens from Assam. Two males in the BMNH represent the type-series and bear the following labels; 'FELDER COLL.^{N} / Rothschild Bequest B.N. 1939–1.'. In addition, one male bears the following labels; 'Lectotype (purple) / India sept. Silhet type / TYPE / Charaxes arja Felder & Felder LECTOTYPE det R. L. Smiles 1979', and is hereby designated lectotype. The remaining male bears the additional labels; 'Paralectotype (blue) / India septent Assam / Charaxes arja Felder & Felder PARALECTOTYPE det. R. L. Smiles 1979'.

Eulepis arja f. temp. *vernus* Rothschild is represented in the BMNH by one male holotype which bears the following labels; 'Holotype (red) / SIKKIM 23.3 1888 O. MØLLER / Rothschild Bequest B.M. 1939–1. / Eulepis arja f. temp. vernus Rothschild HOLOTYPE det. R. L. Smiles 1977'.

BIONOMICS. There are records in the BMNH for capture throughout the year at altitudes up to 1800 m. Duckworth, Watson & Whalley (1975: 267) observe 'This is a common butterfly over much of its range flying rapidly round in the thickest jungle, feeding on rotten fruit, plant sap, but not usually found at flowers.'.

Polyura hebe (Butler)

(Figs 37–39, 53–55, 118–126, Map 2)

Charaxes hebe Butler, 1866: 634, pl. 37, fig. 3.
Nymphalis hebe (Butler) Kirby, 1871: 271.
Eulepis hebe (Butler) Moore, [1896]: 263; Rothschild & Jordan, 1899: 299, p. 7, figs 1–3.
Eriboea hebe (Butler) Fruhstorfer, 1914: 721.
Polyura hebe (Butler) Stichel, 1939: 568; Boonsong, Askins, Nabhitabhata & Samruadkit, 1977: 140, pl. 68, fig. 342.

MALE, FEMALE. *Upperside.* Forewing apex, outer and costal margins black, with a pale, greenish yellow postdiscal spot in cell M_1. The rest of the wing covered by a discal patch, also pale greenish yellow, but greener than in *P. jalysus*. Hindwing in many cases almost completely pale greenish yellow except for a black outer margin and black submarginal, white pupilled ocelli, which may join to form a black submarginal band. The distal edge of the pale patch is often glaucous, and the admarginals are sometimes yellowish orange. Tails often blue-centred. *Underside.* Ground colour pale brown, sometimes a darker, pinkish brown. Forewing outer margin olive-brown. Submarginal spots are well delineated chevrons. A pale green discal band is surrounded by a red-brown, arcuate band which incorporates the umbra distally and, unlike *P. jalysus*, surrounds the pale green subapical spot. Towards the wing base this band is delineated by MI and MII, DI being present at the end of the discal cell, and DII as one or two minute black dots towards the base of the discal cell. Hindwing with margins olive-brown or black, admarginals suppressed or, if present, pale yellow-orange. A complete double row of black (distal) and white (proximal) submarginal spots is present; double spots in cell Cu_{1b}. Postdiscal lunules complete, displaced proximally from cells R_1 to M_1, and smallest in cell M_1. In cell R_1 and from cell M_2 to the tornus, the lunules are outlined distally with

black, In cells M_3, Cu_{1a} and exceptionally other cells, the lunules are bordered proximally with white. A thin black line divides them from a proximal red-brown band, which skirts the outer margin of a pale green discal band. This band begins on the costal margin and tapers to end in a point on vein Cu_{1b}, after running along it for about half its length. It is much narrower at the costal margin than the discal patch of the upperside, *cf. P. moori* which is only a little less wide. Like the forewing, the discal band is bordered proximally by a red-brown band, delineated by MI and MII.

Abdomen buff-brown, pleura often paler.

RANGE. From southern Burma through Western Malaysia, Singapore, the islands of Sumatra, Simeulue, Sipora, Nias, Borneo, Java, Bawean, Bali, Kangean and Lombok, to Sumba.

Polyura hebe hebe (Butler)

(Figs 37, 53, 118)

Charaxes hebe Butler, 1866: 634, pl. 37, fig. 3. LECTOTYPE ♀, SUMATRA (BMNH), here designated [examined].
Charaxes albanus Röber, 1895: 66. Holotype ♂, SUMATRA (BMNH) [examined].
Eulepis hebe (Butler) Rothschild & Jordan, 1898: pl. 12, fig. 10.
Eulepis hebe hebe (Butler); Rothschild & Jordan, 1899: 233.
Eriboea hebe hebe (Butler) Fruhstorfer, 1914: 721, pl. 134b.
Polyura hebe (Butler) Stichel, 1939: 568.

MALE, FEMALE. *Upperside.* Similar to *P. h. chersonesus* but with the pale areas, if anything, more extensive. The subapical spot of the forewing is normally larger. *Underside.* As in *P. h. chersonesus.*

The taxon *albanus* Röber is a very light form of this subspecies in which almost the entire upperside of the hindwing is covered by the disco-basal patch.

SIZE. ♂; $\bar{x} = 35{\cdot}8$, $s = 1{\cdot}5$ (40 specimens). ♀; 6 specimens only, 37·2, 37·8, 39·0, 39·6, 39·9, 40·0.

DISTRIBUTION. **Sumatra**: [Kröe, Res. Benkoelen]; Tebing Tinggi; South Kerintji Valley; [Kand^{g} Ampat, Pad. Benedenl]; Padang; Marang; Padangsidempuan; Palemburg distr.; [Selesseh]; Gajo Mts [Gayoe Mts]; [Bekantschen]; [Setinjak]; Sibolga; Propoe nr Padang [Bng. proepoe, Pad. Bovenland]; Deli; Barisan Range, Lubuk Linggau nr Lahat; Lebongtandai. 71 ♂, 6 ♀.

TYPE-MATERIAL. *Charaxes hebe* Butler was described from an unspecified number of specimens from Sumatra. In the BMNH there is a female which bears the following labels; 'Lectotype (purple) / Sumatra. 64.64. / Charaxes hebe ♀ type Butler. / B.M. TYPE No. Rh. 10437. Charaxes hebe, ♀ Butl. / Charaxes hebe Butler LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype.

Charaxes albanus Röber was described from a single male specimen which is now in the BMNH, and which bears the following labels; 'Holotype (red) / Sumatra Deli ex coll. Fruhstorfer / Fruhstorfer coll. B.M. 1937–285 / Type / Albanus Röb. spec. typ. / Charaxes albanus Röber HOLOTYPE det. R. L. Smiles 1976'.

BIONOMICS. There are records in the BMNH for all months of the year at altitudes between 490 and 1500 m.

Polyura hebe chersonesus (Fruhstorfer)

(Fig. 119)

Charaxes hebe Butler; Distant, 1883: 107, pl. 15, fig. 2 [in part].
Charaxes attalus chersonesus Fruhstorfer, 1898: 55. LECTOTYPE ♂, [WEST MALAYSIA] (BMNH), here designated [examined].
Eulepis attalus chersonesus (Fruhstorfer) Fruhstorfer, 1898: 56.
Eulepis hebe chersonesus (Fruhstorfer); Rothschild & Jordan, 1899: 231, pl. 7, fig. 1.
Eriboea hebe chersonesus (Fruhstorfer) Fruhstorfer, 1914: 721; Evans, 1924: 895; 1927: 93; Corbet & Pendlebury, 1934: 178, pl. 12, fig. 156.
Polyura hebe chersonesus (Fruhstorfer) Stichel, 1939: 569; Corbet & Pendlebury, 1956: 246; Fleming, 1975: 53, pl. 53, fig. N142A; Pinratana, 1979: 99, fig. N169.

MALE, FEMALE. *Upperside.* Disco-basal patches extended, that of the hindwing extending along the veins to the admarginals. Forewing band often extending diffusely into the discal cell. *Underside.* Ground colour light brown. Discal band of hindwing between costal margin and vein M_3 concave.

SIZE. ♂; $\bar{x} = 34{\cdot}7$, $s = 1{\cdot}8$ (40 specimens). ♀; 6 specimens only, 35·2, 36·9, 37·1, 37·2, 38·1, 38·3.

DISTRIBUTION. **Burma**: Mergui, Lenya Valley; Victoria Point. **Thailand**: Ranong. **West Malaysia.** Perak: Kinta; Gopeng; Pahang Rd; Taiping; Kuala Kangsar; Batang Padang. [Gunong Ijau]; [Camp Joor, watershed betw. Perak and Pahang]. Selangore: Klang. Pahang: Mt Tahan. 42 ♂, 6 ♀.

TYPE-MATERIAL. Fruhstorfer listed two males from 'Singapore, Perak' as the types of this taxon, but then went on to describe the female. For this reason the type-series cannot be composed of two males only. As regards the type-locality, Rothschild & Jordan (1899: 231) state that Fruhstorfer obtained the specimens from the Museum at Singapore and labelled them 'ex Museo Singapore'. It is extremely unlikely that this locality is correct as *P. h. plautus* is found there. In the BMNH are a male and a female which I believe represent the type-series. They both bear the following labels; 'Fruhstorfer Coll. B.M. 1937–285 / Type'. In addition, the male bears the following labels; 'Lectotype (purple) / E. Museo Singapore H. Fruhstorfer. / Charaxes attalus chersonesus Fruhstorfer LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The female bears the additional labels; 'Paralectotype (blue) / Singapore Fruhstorfer / Charaxes attalus chersonesus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. In the BMNH there are records for January, March, May, June and November.

Polyura hebe plautus (Fruhstorfer)

(Fig. 120)

Charaxes [*attalus*] *plautus* Fruhstorfer, 1898: 54. LECTOTYPE ♂, SINGAPORE (BMNH), here designated [examined].
Eulepis attalus plautus (Fruhstorfer) Fruhstorfer, 1898: 56.
Eulepis hebe plautus (Fruhstorfer); Rothschild & Jordan, 1898: pl. 12, fig. 9; 1899: 232.
Eriboea [*hebe*] *falculus* Fruhstorfer, 1914: pl. 137a. Holotype (? sex), no locality (untraced).
Eriboea hebe plautus (Fruhstorfer) Fruhstorfer, 1914: 721, pl. 134b.
Eriboea hebe falculus Fruhstorfer; Fruhstorfer, 1914: 721.
Polyura hebe plautus (Fruhstorfer) Stichel, 1939: 569; Corbet & Pendelbury, 1956: 246.
Polyura hebe falculus (Fruhstorfer) Stichel, 1939: 569.

MALE, FEMALE. *Upperside.* Forewing with discal band restricted, not normally entering discal cell and with a straighter, less diffuse outer margin than in any subspecies except *fallax*, *nikias*, *kangeana*, *lombokiana*, *baweanica* and *arnoldi*. Hindwing band also restricted, covering about two-thirds of the wing—less than in any other subspecies. Admarginals largely suppressed. *Underside.* Ground colour light brown. Discal band of hindwing between costal margin and vein M_3 straight or only slightly concave.

The name *falculus* Fruhstorfer was mistakenly applied to a figure (Fruhstorfer, 1914: pl. 137a) and was later published in the text of the same work as a synonym of *plautus*.

SIZE. ♂; $\bar{x} = 34{\cdot}7$, $s = 1{\cdot}7$ (12 specimens). ♀; 5 specimens only, 35·7, 36·9, 38·6, 33·9, 38·4.

DISTRIBUTION. **Singapore**: Serangoon. 12 ♂, 5 ♀.

TYPE-MATERIAL. *Charaxes* [*attalus*] *plautus* Fruhstorfer was described from an unspecified number of specimens from Singapore. The type-series is represented by the BMNH by seven males and four females. One male bears the following labels; 'Lectotype (purple) / Singapore Fruhstorfer / Type / Fruhstorfer Coll. B.M. 1937–285. / Charaxes [attalus] plautus Fruh. LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The remaining paralectotypes all bear the labels; 'Paralectotype (blue) / Charaxes [attalus] plautus Fruh. PARALECTOTYPE det. R. L. Smiles 1978': in addition, one male and one female bear the labels; 'Singapore H. Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285.', one male and two females; 'Singapore Fruhstorfer / Type / Fruhstorfer Coll. B.M. 1937–285.', four males; 'Singapore Fruhstorfer / Type / Rothschild Bequest B.M. 1939–1.', and one female; 'E. Museo Singapore H. Fruhstorfer / Type / Fruhstorfer Coll. B.M. 1937–285.'.

Eriboea [*hebe*] *falculus* Fruhstorfer was a name introduced in error as a figure legend. The holotype must therefore be the illustrated specimen. However, none of those specimens from the Fruhstorfer collection in the BMNH correspond sufficiently with the figure to be considered, and as yet the specimen remains untraced.

BIONOMICS. There are records in the BMNH for March, April and July.

EARLY STAGES. The full-grown larva is dark green with a pale yellow lateral line, particularly noticeable towards the tail. The head is green with two lighter green bands, each running from the dorso-lateral horns to the mouth. The four horns are curved and backward pointing. On each segment there is a mottled, pale green crescent, with the points forward pointing and yellow (Fountaine, *in litt.*).

The pupa is green with ragged-edged white bands on the wing-cases, and white bands running down the abdomen to the caudal extremity, which is brown (Fountaine, *in litt.*).

Foodplant: *Adenanthera pavonina* (Leguminosae) (Fountaine, *in litt.*).

Polyura hebe clavata (van Eecke)

Eriboea hebe clavata van Eecke, 1918: 92, pl. 8, fig. 14. LECTOTYPE ♂, LASIA (RNH, Leiden), here designated [examined].
Polyura hebe clavata (van Eecke) Stichel, 1939: 571.

MALE. *Upperside.* Similar to *P. h. plautus*, but pale areas not so extensive as in that subspecies. Hindwing with disco-basal patch having the outer edge less indented, more glaucous. Submarginal spots larger. *Underside.* Similar to *P. h. plautus*, discal band of hindwing between costal margin and vein M_3 slightly concave.

SIZE. 2 specimens only, 35·1, 35·4.

DISTRIBUTION. **Lasia** [Pulu Lasiak] (nr Simeulue, Indonesia). 2 ♂.

TYPE-MATERIAL. Described from two males, now in the RNH, Leiden, which both bear the label; 'Eriboea hebe clavata v. E. type ♂'. One male also bears the following labels; 'Lectotype (purple) / E. Jacobson Pulu Lasiak Sum. Jan. 1916 / 3 60 / Eriboea hebe clavata van Eecke LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The other male bears the additional labels; 'Paralectotype (blue) / E. Jacobson Pulu. Lasiak leg. G. Uarmsen [?] Sun. Jan. 1916 / 3 61 / Eriboea hebe clavata van Eecke PARALECTOTYPE det. R. L. Smiles 1979'.

BIONOMICS. Has been taken during January according to the specimens from the RNH, Leiden, otherwise nothing else known.

Polyura hebe quaesita Corbet

(Figs 39, 55)

Polyura hebe quaesita Corbet, 1942: 625. Holotype ♂, SIPORA (BMNH) [examined].

MALE. *Upperside.* Forewing similar to *P. h. plautus*, discal band slightly more restricted. Hindwing with disco-basal patch rather more extensive, distal edge more clearly dentate than even *P. h. clavata*, more glaucous than in *P. h. plautus*. *Underside.* Ground colour paler than that of *P. h. plautus*, area distal to the postdiscal spots of the hindwing olive-green. Discal band of the hindwing between costal margin and vein M_3 slightly concave.

SIZE. 1 specimen only, 34·0.

DISTRIBUTION. **Sipora I.** (south-west of Sumatra). 1 ♂.

TYPE-MATERIAL. Described from a single male. This holotype is now in the BMNH and bears the following labels; 'Holotype (red) / Sipora I., W. of Sumatra, October 1924 (C. B. K. & N. S.). / B.M. TYPE No. Rh. 15038 Polyura hebe quaesita Cbt. ♂ Holotype. / Brit. Mus. 1942–21. / Polyura hebe quaesita Corbet HOLOTYPE det. R. L. Smiles 1975'.

BIONOMICS. Apart from the data on the type-specimen, I know of no other information regarding this subspecies.

Polyura hebe fallacides (Fruhstorfer)

(Fig. 121)

Charaxes fallacides Fruhstorfer, 1895*a*: 170. Holotype ♂, Nias (BMNH) [examined].
Charaxes hebe fallacides Fruhstorfer; Fruhstorfer, 1898: 55.
Eulepis attalus fallacides (Fruhstorfer) Fruhstorfer, 1898: 56.
Eulepis hebe (Butler); Rothschild & Jordan, 1898: pl. 12, fig. 8.
Eulepis hebe fallacides (Fruhstorfer); Rothschild & Jordan, 1899: 234.
Eriboea hebe fallacides (Fruhstorfer) Fruhstorfer, 1914: 721, pl. 134b.
Polyura hebe fallacides (Fruhstorfer) Stichel, 1939: 570.

Male, female. *Upperside.* Forewing as in *P. h. chersonesus* but with less pale scaling overlying the discal cell. Hindwing with the edge of the disco-basal patch in the male, distinctly blue, and this extending along the veins to the admarginals. *Underside.* Ground colour pale brown. Hindwing discal band with outer edge slightly concave between the costal margin and vein M_3.

Female. *Upperside.* Subapical spot of forewing much larger than in male. Hindwing with distal edge of disco-basal patch less glaucous, less well-defined and more extensive than in male.

Size. ♂; $\bar{x} = 34{\cdot}0$, $s = 1{\cdot}1$ (29 specimens); ♀; 1 specimen only, 37·1.

Distribution. **Nias**: Gunungsitoli; [Kalim Bungo]; Lahagu; [Dyma]; [Parea, S. Bona]. 29 ♂, 1 ♀.

Type-material. Described from a single specimen. This male holotype is now in the BMNH and bears the following labels; 'Holotype (red) / Nias ex coll. Fruhstorfer / Type / Fruhstorfer Coll. B.M. 1937–285. / Charaxes fallacides Fruhstorfer, HOLOTYPE det. R. L. Smiles 1975'.

Bionomics. There are records in the BMNH for February–March, March, March–May, and September.

Polyura hebe ganymedes (Staudinger)

(Fig. 122)

Charaxes ganymedes Staudinger, 1886: 173; Fruhstorfer, 1898: 54. Syntype(s) (? sex), Borneo (MNHU, Berlin) [not examined].
Eulepis ganymedes (Staudinger) Moore, [1896]: 263.
Eulepis attalus ganymedes (Staudinger); Fruhstorfer, 1898: 55.
Eulepis hebe ganymedes (Staudinger); Rothschild & Jordan, 1899: 232, pl. 7, fig. 2.
Eriboea hebe ganymedes (Staudinger) Fruhstorfer, 1914: 721.
Polyura hebe ganymedes (Staudinger) Stichel, 1939: 569.

Male. *Upperside.* Forewing discal band with outer margin more diffuse than in other subspecies, and produced along veins Cu_{1b} and 2A almost to the outer margin. Hindwing with outer margin of disco-basal patch highly dentate, glaucous, and often extending along the veins to the admarginals towards the anal angle. *Underside.* Ground colour brown. Outer margin of discal band from costal margin to vein M_3 highly concave.

Female. Differs in its larger size, in the proportionately larger subapical spot of the forewing, and in the straighter outer margin of the forewing.

Size. ♂; $\bar{x} = 37{\cdot}1$, $s = 1{\cdot}7$ (32 specimens). ♀; 4 specimens only, 42·7, 40·3, 41·4, 36·9.

Distribution. **Sarawak**: Kuching; Bidi; Mt Mulu; Limbang R. **Sabah**: Mt Kinabalu; [Mt Marapok, Dent. Province]; Lawas; Sandakan. **Kalimantan**: Pontianak. 32 ♂, 4 ♀.

Bionomics. There are records in the BMNH for January, April, August, August–December, and December–February, at altitudes between 300 and 1200 m.

Polyura hebe fallax (Röber)

(Fig. 123)

Charaxes fallax Röber, 1894: 290, 291, 293. Syntype(s) (? sex), Java (MNHU, Berlin) [not examined].
Eulepis smerdis Moore, [1896]: 263. [Nomen nudum.]

Eulepis hebe (Butler); Rothschild & Jordan, 1898: pl. 12, fig. 12.
Eulepis hebe fallax (Röber) Rothschild & Jordan, 1899: 235.
Eriboea hebe fallax (Röber) Fruhstorfer, 1914: 721; Roepke, 1932: 96, fig. 167.
Charaxes hebe fallax Röber Roepke, 1938: 350, fig. 52, pl. 35, fig. 10, pl. 36, fig. 7.
Polyura hebe fallax (Röber) Stichel, 1939: 570.

MALE, FEMALE. *Upperside.* Forewing discal band outer margin slightly curved, not produced along veins, not glaucous—similar to *P. h. nikias*, *kangeana*, *lombokiana*, *baweanica* and *arnoldi*. Hindwing disco-basal patch with outer margin only slightly diffuse, barely dentate. Dark submarginal band broad, admarginals largely suppressed, but blue centres to tails present. *Underside.* Ground colour light brown, forewing subapical spot large. Hindwing with outer margin of discal band from costal margin to vein M_3 only slightly concave.

SIZE. ♂; $\bar{x} = 34{\cdot}8$, $s = 1{\cdot}2$ (40 specimens). ♀; $\bar{x} = 38{\cdot}0$, $s = 1{\cdot}4$ (8 specimens).

DISTRIBUTION. **Java**: Sukabumi; Pelabuhan Ratu; [Palabuan]; Mt Gede; Prov. Pasuruan, [Kallpari]; Bogor; Lawang. 84 ♂, 10 ♀.

BIONOMICS. There are records in the BMNH for February, February and March, and July–August at altitudes up to 1500 m. Fruhstorfer (1914: 721) notes 'The butterflies are met in wet places near crossings of rivers'.

EARLY STAGES. Two foodplants have been noted: *Adenanthera pavonina* and *Albizia falcata* (Leguminosae) (Roepke, 1938: 350).

Polyura hebe nikias (Fruhstorfer)

(Fig. 124)

Charaxes (*Eulepis*) *hebe* Butler; de Nicéville & Elwes, 1898: 692.
Eulepis hebe (Butler); Rothschild & Jordan, 1898: pl. 12, fig. 11; Fruhstorfer, 1906: 179.
Eulepis hebe fallax (Röber); Rothschild & Jordan, 1899: 235 [in part].
Eriboea hebe nikias Fruhstorfer, 1914: 721. Syntype(s) (? sex), BALI (probably in MNHU, Berlin (Staudinger coll.), or ZSBS, Munich (Martin coll.)) [not examined].
Polyura hebe nikias (Fruhstorfer) Stichel, 1939: 571.

MALE. *Upperside.* Similar to *P. h. fallax*, but discal bands more restricted. Hindwing admarginals suppressed, as are blue centres of tails (*cf. P. h. fallax*). *Underside.* Ground colour brown; hindwing discal band outer margin only slightly concave from costal margin to vein M_3.

SIZE. ♂; $\bar{x} = 32{\cdot}5$, $s = 0{\cdot}7$ (7 specimens).

DISTRIBUTION. **Bali.** 7 ♂.

BIONOMICS. In the BMNH there are records for capture during March and April, in low country and at altitudes between 600 and 1200 m. Fruhstorfer (1914: 721) describes it as very rare.

Polyura hebe kangeana (Fruhstorfer)

(Fig. 125)

Eulepis hebe kangeanus Fruhstorfer, 1903: 94. LECTOTYPE ♂, KANGEAN IS. (BMNH), here designated [examined].
Eriboea hebe kangeanus (Fruhstorfer) Fruhstorfer, 1914: 721.
Polyura hebe kangeanus (Fruhstorfer) Stichel, 1939: 571.

MALE. *Upperside.* Forewing similar to *P. h. fallax*; subapical spot larger than in *P. h. nikias* or *lombokiana*. Hindwing with outer margin of disco-basal patch more extensive than in *P. h. fallax*, *nikias*, *lombokiana*, or *plautus*, extending along veins to form a dentate margin. Admarginals only partly suppressed, blue or orange. Blue centres present in tails. *Underside.* Ground colour light brown. Hindwing discal band outer margin slightly concave between costal margin and vein M_3.

SIZE. ♂; $\bar{x} = 33{\cdot}3$, $s = 0{\cdot}6$ (7 specimens).

DISTRIBUTION. **Kangean Is.** 7 ♂.

TYPE-MATERIAL. According to the original description, Fruhstorfer had four males; however, six males in the BMNH bear an identical, partly handwritten label; 'Kangean Fruhstorfer'. As Fruhstorfer collected in this area only between 1895 and 1896, and the description was not published until 1903, these six specimens must all be included in the type-series. In addition to the above label, one male bears the following; 'Lectotype (purple) / hebe kangeanus Fruhst. [Fruhstorfer's handwriting] / Fruhstorfer Coll. B.M. 1937–285. / Eulepis hebe kangeanus Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. All the remaining specimens bear the labels; 'Paralectotype (blue) / Eulepis hebe kangeanus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1979'. In addition four males bear the following; 'Fruhstorfer Coll. B.M. 1937–285.', and one of these an extra label; 'Type'. The remaining male bears the additional label; 'Rothschild Bequest B.M. 1939–1.'.

BIONOMICS. In the BMNH there is a record for August–September, otherwise nothing is known.

Polyura hebe lombokiana (Fruhstorfer)

(Figs 38, 54)

Charaxes attalus lombokianus Fruhstorfer, 1898: 56. LECTOTYPE ♂, LOMBOK (BMNH), here designated [examined].
Eulepis attalus lombokianus (Fruhstorfer) Fruhstorfer, 1898: 56.
Euelpis hebe lombokianus (Fruhstorfer); Rothschild & Jordan, 1899: 236, pl. 7, fig. 3.
Eriboea hebe lombokianus (Fruhstorfer) Fruhstorfer, 1914: 721.
Polyura hebe lombokianus (Fruhstorfer) Stichel, 1939: 571.

MALE. *Upperside.* Forewing similar to *P. h. nikias.* Hindwing with outer margin of disco-basal patch extending as far as in *P. h. fallax*, but glaucous. Admarginals a subdued orange; tails blue-centred. *Underside.* Ground colour brown, but with a rather more rufous cast than is the case in *P. h. nikias, kangeana* or *baweanica.* Outer margin of discal band between costal margin and vein M_3 slightly concave.

SIZE. ♂; $\bar{x} = 34{\cdot}2$, $s = 0{\cdot}8$ (7 specimens).

DISTRIBUTION. **Lombok**: Sapit; Pringgabaja; Sewela. 7 ♂.

TYPE-MATERIAL. Described from an unspecified number of specimens which are now represented in the BMNH by five males. Of these, one male bears the following labels; 'Lectotype (purple) / Lombok Sapit 2000' Mai–Juni 1896 H. Fruhstorfer. / Type / Fruhstorfer Coll. B.M. 1937–285. / Charaxes attalus lombokianus Fruh. LECTOTYPE det. R. L. Smiles 1979', and is here designated lectotype. The remaining four males all bear the following labels; 'Paralectotype (blue) / Charaxes attalus lombokianus Fruh. PARALECTOTYPE det. R. L. Smiles 1979'. In addition these butterflies bear the following labels: one male; 'Lombok Sapit 2000' Mai–Juni 1896 H. Fruhstorfer / Rothschild Bequest B.M. 1939–1', one male; 'Lombok Sapit 2000' April 1896 H. Fruhstorfer. / Type / Rothschild Bequest B.M. 1939–1', one male; 'Lombok Sapit 2000' Mai–Juni 1896 H. Fruhstorfer. / Type / Fruhstorfer Coll. B.M. 1937–285.', and one male; 'Lombok Pringabaja April 1896 H. Fruhstorfer. / Rothschild Bequest B.M. 1939–1'.

BIONOMICS. There are records in the BMNH for April, May–June, and June at 600 m. Fruhstorfer (1914: 721) states that the butterfly is found up to 800 m.

Polyura hebe baweanica (Fruhstorfer)

(Fig. 126)

Eulepis hebe baweanicus Fruhstorfer, 1906: 179. Holotype ♂, BAWEAN (BMNH) [examined].
Eriboea hebe baweanicus (Fruhstorfer) Fruhstorfer, 1914: 721.
Polyura hebe baweanicus (Fruhstorfer) Stichel, 1939: 571.

MALE. *Upperside.* As in *P. h. kangeana*, but subapical spot larger. In the specimen available for study, the outer margins of the hindwings are badly damaged, so differences here may occur. *Underside.* Ground colour pale brown, paler than in *P. h. kangeana*, black markings rather fine. Hindwing outer margin of discal band almost straight, only very slightly concave between the costal margin and vein M_3.

SIZE. ♂; 1 specimen only, 32·8.

DISTRIBUTION. **Bawean.** 1 ♂.

TYPE-MATERIAL. Described from a single specimen now in the BMNH. This male holotype bears the following labels; 'Holotype (red) / Bawean Juli–Sept. Fruhstorfer / Type / Fruhstorfer Coll. B.M. 1937–285. / Eulepis hebe baweanicus Fruh. HOLOTYPE det. R. L. Smiles 1975'.

BIONOMICS. I have no information other than that with the holotype.

Polyura hebe arnoldi (Rothschild)

Eulepis hebe arnoldi Rothschild, 1899: 236. Holotype ♂, SUMBA (probably in Landesmuseum für Naturkunde, Wiesbaden) [not examined].
Eriboea hebe arnoldi (Rothschild) Fruhstorfer, 1914: 721.
Polyura hebe arnoldi (Rothschild) Stichel, 1939; 571.

MALE. *Upperside.* According to Rothschild's description, the light areas of the forewing are as in *P. h. fallax*, but are more extensive in the hindwing than in that subspecies. *Underside.* As in *P. h. fallax*, except for the discal band of the hindwing which is broader. DII of the forewing forms two black spots instead of one.

DISTRIBUTION. **Sumba.**

TYPE-MATERIAL. Described from a single male specimen from Pagenstecher's collection, now presumably in the depository shown above.

Polyura moori (Distant)

(Figs 40, 41, 56, 57, 149–153, Map 2)

Charaxes moori Distant, 1883: 108, pl. 13, fig. 3.
Eulepis moori (Distant) Moore, [1896]: 260, pl. 187, figs 2, 2a; Rothschild & Jordan, 1898: pl. 12, figs. 3–7; 1899: 237; Bingham, 1905:224.
Eriboea moori (Distant) Fruhstorfer, 1914: 720, pl. 134b.
Polyura moori (Distant) Stichel, 1939: 565; Lewis, 1974: 271, pl. 150, fig. 5; Smart, 1976; 219, fig. 24.

MALE, FEMALE. *Upperside.* Forewing apex, outer and costal margins black, with a pale, greenish yellow postdiscal spot in cell M_1. The rest of the wing covered with a discal patch or band of similar colour. Hindwing with admarginals normally suppressed in cells R_1, M_3 and Cu_{1a}. In the darkest individuals,. a black submarginal strip separates the admarginals from the greenish yellow, disco-basal patch. Towards the outer edge of this strip lie a row of white spots—one in each cell. In the lightest examples, however, this black strip is restricted to form small, black, circular patches around each white spot except at the wing apex in cells R_1 and R_5, where it forms a larger patch (*cf. P. hebe*). *Underside.* Ground colour pale brown with a pinkish cast. Outer margins of forewing a darker brown, sometimes olivaceous. Submarginal spots are well-delineated chevrons. As in *P. hebe*, a pale green discal band is surrounded by a red-brown, arcuate band which incorporates the umbra distally and surrounds, in a majority of cases, the subapical, green spot (*cf. P. jalysus*). This band is delineated towards the wing base by MI and MII; DI being present at the end of the discal cell. DII is apparent as a small dot lying close to, or incorporated with, MII in the discal cell. Hindwing admarginals yellow. A complete double row of black (distal) and white (proximal) submarginal spots present; double spots in cell Cu_{1b}. Postdiscal lunules as in *P. hebe*. Discal band pale green, running from costal margin and tapering to end in a small, yellow-orange patch just beyond vein Cu_{1b}. It is only slightly less wide at the costal margin than the discal patch of the upperside, unlike *P. hebe*. As in the forewing, the discal band is bordered proximally by a red-brown band, delineated by MI and MII.

Abdomen above buff or off-white, pleura off-white, buff or brown beneath.

RANGE. From Sikkim, Assam, Nagaland through Burma, Western Malaysia and Singapore, to Sumatra, Nias, Java, Bali, Borneo and Natuna Is.

Polyura moori moori (Distant)

(Figs 40, 56, 150)

Charaxes moori Distant, 1883: 108, pl. 13, fig. 3; de Nicéville & Martin, 1896: 436. Holotype (? sex), WEST MALAYSIA [untraced].

Eulepis moori (Distant) Rothschild & Jordan, 1898: pl. 12, figs 4, 6.
Eulepis moori moori (Distant); Rothschild & Jordan, 1899: 239 [in part].
Eriboea moori moori (Distant) Fruhstorfer, 1914: 720, pl. 134b; Corbet & Pendlebury, 1934: 178.
Polyura moori moori (Distant) Stichel, 1939: 565; Corbet & Pendlebury, 1956: 246; 1978: 213; Pinratana, 1979: 98, fig. N168.

MALE. *Upperside.* Forewing subapical spot smaller than in *P. m. sandakana.* Discal band extended slightly along veins Cu_{1b} and 2A, but less than in *P. m. kaba.* Hindwing black area at apex smaller than in *P. m. saida.* Glaucous outer margin of disco-basal patch extends along veins M_1, M_2 and Cu_{1b} to join admarginals, often along M_3, and sometimes along Cu_{1a}. *Underside.* Ground colour pinkish brown.

FEMALE. *Upperside.* Pale areas extended. *Underside.* Ground colour paler than in male.

SIZE. ♂; $\bar{x} = 35{\cdot}6$, $s = 1{\cdot}2$ (40 specimens). ♀; 4 specimens only, 39·3, 39·8, 35·5, 40·4.

DISTRIBUTION. **Western Malaysia** (Malaka): Perak; [Camp Joor, watershed betw. Perak and Pahang]. **Singapore. Sumatra**: Solok; Batak Mts; Padangsidempuan; Gajo Mts; Padang; Deli; Lebongtandai; [Bekantschan]; Upper Palemburg District; [Setinjak]; Gunung Talang, nr Padang [Gng. Talang, Pad. Bovenland]; Propoe, nr Padang [Bng. Proepoe, Pad. Bovenland]; Marang. 62♂, 4♀.

TYPE-MATERIAL. The holotype from 'Malay Peninsula, Province Wellesley', should have gone to the Tring museum with the rest of Distant's collection, which would mean that it would now be expected to be in the BMNH. Unfortunately I have been unable to trace this specimen.

BIONOMICS. In the BMNH there are records for January, February, March, January–April, May, May–August, September, and September–December at 500 m. De Nicéville & Martin (1896: 436) state that this butterfly occurs at 'lower elevations'.

Polyura moori sandakana (Fruhstorfer)

(Fig. 151)

Charaxes sandakanus Fruhstorfer, 1895*b*: 197. Holotype ♂, [INDIA: Assam] (BMNH) [examined].
Eulepis attalus sandakanus (Fruhstorfer) Fruhstorfer, 1898: 56.
Eulepis moori (Distant); Rothschild & Jordan, 1898: pl. 12, fig. 3.
Eulepis moori sandakanus (Fruhstorfer); Rothschild & Jordan, 1899: 242, pl. 7, figs 4, 5.
Eulepis moori sandakanus f. *marginalis* Rothschild, 1899: 242. Holotype ♂, INDIA: Naga Hills (BMNH) [examined].
Eriboea moori sandakanus (Fruhstorfer) Fruhstorfer, 1914: 720; Evans, 1924: 895; 1927: 93.
Eriboea moori sandakanus w.s.f. *marginalis* (Rothschild) Fruhstorfer, 1914: 720.
Polyura moori sandakanus (Fruhstorfer) Stichel, 1939: 566.
Polyura moori sandakanus f. *marginalis* (Rothschild) Stichel, 1939: 566.

MALE. *Upperside.* Forewing with subapical spot larger than in any other subspecies. Discal band as in *P. m. moori.* There are two forms: in one of these the hindwing is similar to *P. m. moori* but with pale areas slightly more extensive (f. *sandakana*). In the other there is a continuous black strip distal to the pale discal band and the submarginal white spots are very much smaller (f. *marginalis*). *Underside.* Ground colour light pinkish brown, often slightly lighter than in other subspecies.

FEMALE. Larger with pale areas more extensive than in both the male forms.

The females in the BMNH are the same in this respect and most closely resemble f. *sandakana*, although Rothschild (1899: 243) does mention a female f. *marginalis* in Staudinger's collection. Four males in the BMNH can be included in f. *sandakana* but the great majority are f. *marginalis.*

SIZE. ♂; 4 specimens only, 35·0, 36·0, 36·0, 36·7.

DISTRIBUTION. **North India**: Sikkim; Assam, Dafla Hills; Assam, Garo Hills; Assam, Khasi Hills; Nagaland, Naga Hills, Nichuguard. **Burma**: Ataran Valley; [Dansin Valley]; Moulmein; Victoria Point. 19♂, 3♀.

TYPE-MATERIAL. *Charaxes sandakanus* Fruhstorfer was described from 'Nord Borneo', but in fact Fruhstorfer subsequently corrected this (1914: 720), stating that specimens from Assam had been sold to him as coming from Borneo. The holotype is in the BMNH and bears the following

labels; 'Holotype (red) / Nordborneo Alverett ex coll. Fruhstorfer. / Type / Charaxes sandakanus Fruhstorfer HOLOTYPE det. R. L. Smiles 1975'.

Eulepis moori sandakanus f. *marginalis* Rothschild. The male holotype and two male paratypes are now in the BMNH and bear the following labels; 'Naga Hills Sherwill / Rothschild Bequest 1939–1.'. In addition the holotype bears the following labels; 'Holotype (red) / E. moori f. marginalis Type'. Rothsch. 1900. / Eulepis moori sandakanus f. marginalis Roths., HOLOTYPE det. R. L. Smiles 1975'. The two male paratypes bear the additional labels; 'Paratype (yellow) / Eulepis moori sandakanus f. marginalis Roths., PARATYPE det. R. L. Smiles 1975'.

BIONOMICS. There are records in the BMNH for capture during February, June, July, November and November to December. One specimen is labelled 50 feet [15 m].

Polyura moori kaba (Kheil)

(Figs 41, 57)

Charaxes kaba Kheil, 1884: 27, pl. 3, fig. 19. Syntype(s) (? sex), NIAS (possibly in Národni Museum, Prague) [not examined].
Eulepis attalus kaba (Kheil) Fruhstorfer, 1898: 56.
Eulepis moori kaba (Kheil); Rothschild & Jordan, 1899: 241, pl. 7, fig. 6.
Eriboea moori khaba (sic) (Kheil) Fruhstorfer, 1914: 720.
Polyura moori kaba (Kheil) Stichel, 1939: 567.

MALE. *Upperside.* Forewing with outer edge of discal band more extensive than in other subspecies, and extending markedly into discal cell. Hindwing with outer edge of disco-basal patch extended to join admarginals only along veins M_1 and M_2. *Underside.* Ground colour pinkish brown. Submarginal area of outer margin of forewing and area distal to postdiscal lunules in hindwing more distinctly olive-green than in any other subspecies.

FEMALE. Similar to male, but larger with pale markings more extensive.

SIZE. ♂; $\bar{x} = 35{\cdot}1$, $s = 0{\cdot}7$ (38 specimens). ♀; 1 specimen only, 40·0.

DISTRIBUTION. **Nias**: [Hili Madjedja]; [Dyma]; [Parea, S. Bonaa]; Lahagu; [Kalim Bungo]. 38 ♂, 1 ♀.

BIONOMICS. There are records in the BMNH for February to March, March to May, April and September. Described as very rare (Kheil, 1884: 27).

Polyura moori javana (Röber)

(Fig. 152)

Charaxes javanus Röber, 1895: 66. Holotype ♂, JAVA (BMNH) [examined].
Charaxes moori javanus Röber; Fruhstorfer, 1898: 54 [in part]; Roepke, 1938: 350, pl. 35, fig. 11, text-fig. 53.
Eulepis attalus javanus (Röber) Fruhstorfer, 1898: 56 [in part].
Eulepis moori (Distant); Rothschild & Jordan, 1898: pl. 12, fig. 5.
Eulepis moori moori (Distant); Rothschild & Jordan, 1899: 239 [in part].
Eriboea moori javanus (Röber) Fruhstorfer, 1914: 720.
Polyura moori javanus (Röber) Stichel, 1939: 569.

MALE, FEMALE. *Upperside.* Very similar to *P. m. moori*, but with outer edge of forewing discal band less extended, and in male, with glaucous distal edge of disco-basal patch of hindwing often not joining admarginals, or only joining them at vein M_2. *Underside.* Ground colour pinkish brown.

SIZE. ♂; $\bar{x} = 34{\cdot}7$, $s = 1{\cdot}5$ (18 specimens). ♀; 1 specimen only, 40·4.

DISTRIBUTION. **Java**: Pelabuhan Ratu, Teluk [Wynkoopsbai], [Preanger]; [Palabuan]; Sukabumi, [Mt Sesoeroe]; Mt Gede. 18 ♂, 1 ♀.

TYPE-MATERIAL. Described from a single male. This holotype is now in the BMNH and bears the following labels; 'Holotype (red) / Java merid. Palabuan 1892 H. Fruhstorfer. / Fruhstorfer Coll. B.M. 1937–285. / Javanus Röb spec. typic. / Charaxes javanus Röber HOLOTYPE det R. L. Smiles 1975'.

BIONOMICS. In the BMNH there is one record for December. There is also one altitude record of 1200 m. Fruhstorfer (1914: 720) states that it flies between 610 and 760 m and that it is 'enormously scarce'.

Polyura moori chalazias (Fruhstorfer)

(Fig. 153)

Charaxes (*Eulepis*) *moori* Distant; de Nicéville & Elwes, 1898: 692.
Eulepis moori moori (Distant); Rothschild & Jordan, 1899: 239 [in part].
Eriboea moori chalazias Fruhstorfer, 1914: 720. Holotype ♂?, BALI (probably in ZSBS, Munich) [not examined].
Polyura moori chalazias (Fruhstorfer) Stichel, 1939: 568.

MALE. *Upperside.* Forewing as in *P. m. javana.* Hindwing with outer edge of discal band more blue than in other subspecies. According to the original description, it is smaller than other subspecies. *Underside.* Ground colour pinkish brown.

SIZE. 31·5.

DISTRIBUTION. **Bali.** 1 ♂.

BIONOMICS. The one specimen available for study was captured during September. According to Fruhstorfer (1914: 720) the butterfly is 'very rare'.

Polyura moori saida (Preyer & Cator) **stat. n.**

(Fig. 149)

Charaxes moori Distant; Staudinger, 1886: 173 [in part].
Charaxes saida Preyer & Cator, 1894 (1st October): 258; Corbet, 1947: 417. ? Syntype ♀, SABAH (BMNH) [examined].
Charaxes heracles Röber, 1894 (October): 291, 292, 294. Syntype[s] (sex?), BORNEO (possibly in MNHU, Berlin) [not examined]. **Syn. n.**
Eulepis moori heracles (Röber); Rothschild & Jordan, 1899: 239.
Eriboea moori heracles (Röber) Fruhstorfer, 1914: 721.
Polyura moori heracles (Röber) Stichel, 1939: 567.

MALE. *Upperside.* Forewing discal band similar to *P. m. javana.* Hindwing with rather more extensive black apex than in *P. m. moori, kaba, javana* or *chalazias. Underside.* Ground colour pinkish brown. Hindwing with distal edge of discal band proportionately further from the outer margin than in any other subspecies except, perhaps *P. m. kaba*, but lacking the olive-green patches of that butterfly.

FEMALE. Differs from the male in size, in the more extensive pale markings of the upperside, and in the lighter ground colour of the underside.

It is possible that specimens of this butterfly form a distinct subspecies in Natuna Is., but as yet too few are available for study.

SIZE. ♂; $\bar{x} = 35{\cdot}7$, s = 1·0 (40 specimens). ♀; 3 specimens only, 40·7, 40·8, 41·4.

DISTRIBUTION. **Sabah**: [Byte] (Preyer & Cator, 1894: 258); [Province Clarke, Melamam]; Labuan I.; Mt Kinabalu; Sandakan; [Mt Marapok, Dent Province]; Lawas. **Sarawak**: S. Melinau; Baram River; Bidi. **Kalimantan**: River Sintang; Pontianak; Pengaron; [Tameang Lajang]; [Marabuk R.]; [Bantermasin]. **Natuna Islands**: Bunguran. 51 ♂, 3 ♀.

TYPE-MATERIAL. *Charaxes saida* Preyer & Cator was described from an undisclosed number of specimens from 'Byte', Borneo. In the BMNH there is a female which largely fits the somewhat brief description, but which is not labelled with the above locality. It is possible that this specimen is a syntype, and it bears the following labels; '? Syntype (blue) / Charaxes saida Pr. & Cat / type! / Sandakan. (Preyer & Cator). / Rothschild Bequest B.M. 1939–1. / Charaxes saida Preyer & Cator possible SYNTYPE det. R. L. Smiles 1975'.

BIONOMICS. In the BMNH there are records for January, February, March, April, August,

October and December to February at altitudes between 90 and 1500 m. One specimen was captured at urine on sand.

Polyura jalysus (Felder & Felder)

(Figs 138–141, Map 2)

Charaxes jalysus Felder & Felder, 1867: 438, pl. 59, fig. 5; Distant, 1833: 108, pl. 13, fig. 4.
Eulepis jalysus (Felder & Felder) Moore, [1896]: 259, pl. 187, figs. 1, 1a; Rothschild & Jordan, 1899: 261, pl. 7, fig. 7.
Charaxes (*Eulepis*) *jalysus* Felder & Felder; de Nicéville & Martin, 1896: 435.
Eriboea jalysus (Felder & Felder) Fruhstorfer, 1914: 722, pl. 137a.
Charaxes hebe var. *jalysus* Felder & Felder; Schwanwitsch, 1926: 502, pl. 2, fig. 12.
Polyura jalysus (Felder & Felder) Stichel, 1939: 572; Lewis, 1974: 271, pl. 150, fig. 4.

MALE, FEMALE. *Upperside.* Ground colour (discal area) pale greenish yellow. Forewing with apex, costal and outer margins black. Subapical pale greenish yellow spot present in cell M_1. Hindwing outer margin black, tails blue-centred; admarginals orange, proximal to which run a row of white spots on a black ground. *Underside.* Forewing outer margin brown, submarginal ocelli present as well-delineated chevrons overlying a pale magenta or beige ground which includes the costal margin also. Subapical off-white spot in cell M_1 proximally bordered by MI. A dark, rufous-brown, arcuate band, bordered towards the wing base by MI and MII and interrupted at the end of the discal cell by DI, encloses a pale, greenish, discal patch which extends from vein M_3 to the inner margin. Hindwing outer margin black, tails beige or pale blue-centred. Admarginals orange or ochreous yellow, and distal to a double row of spots—a black distal and a white proximal series on a beige ground. Postdiscal spots of other species are here represented as a complete, non-differentiated series of submarginal, brick-red or crimson lunules proximally outlined with pale bluish scales and the whole delineated by black. Proximal to this lies the orange umbra (Schwanwitsch, 1926: pl. 2, fig. 12) which, together with a rufous brown bar delineated by MI and MII, for the most part encloses the pale greenish discal patch. Wing base and anal margin beige.

Abdomen buff, darker above than beneath.

RANGE. Burma to Thailand, Vietnam, West Malaysia, Sumatra and Borneo. It is to be expected that this species will also be found in Laos and Cambodia.

Polyura jalysus jalysus (Felder & Felder)

(Figs 138, 139)

Charaxes jalysus Felder & Felder, 1867: 438, pl. 59, fig. 5. LECTOTYPE ♂, WEST MALAYSIA (BMNH), here designated [examined].
Eriboea jalysus jalysus (Felder & Felder) Fruhstorfer, 1914: 722, pl. 137a; Corbet & Pendlebury, 1934: 178, pl. 12, fig. 155.
Polyura jalysus jalysus (Felder & Felder) Stichel, 1939: 572; Corbet & Pendlebury, 1956: 246; Fleming, 1975: 54, pl. 56, fig. N143; Pinratana, 1979: 99, fig. 170b.

MALE, FEMALE. *Upperside.* Forewing with discal cell normally black or brown. Hindwing with disco-basal pale area not extending along the veins to connect with the admarginals, but leaving a well-defined black band between itself and the submarginal white spots.

SIZE. ♂; $\bar{x} = 35{\cdot}9$, $s = 1{\cdot}1$ (40 specimens). ♀; 1 specimen only, 39·2.

DISTRIBUTION. **Vietnam**: Bao Ha; Chiem Hoa; Tong. **West Malaysia.** Penang. Perak: Pondok Tanjong; [Lakatt & Pamboo]; Taiping; [Jor. Camp]; Batang Padang. Pahang: Mt Tahan; Bedong, Gunong. Selangore: Kuala Lumpur, Ampang. Malacca. **Sumatra**: Gajo Mts; Batak Mts; [Selesseh]; Lebongtandai; [Setinjak]; Deli; Bila; Sibolga; Padangsidempuan, [Kand^{s}. Ampat, Pad. Benedenl]. 66♂, 1♀.

TYPE-MATERIAL. The type-series is represented in the BMNH by two males and one female which bear the labels; 'Malacca interior Castelnau / FELDER COLL.^{N} / Rothschild Bequest B.M. 1939–1.'. In addition one male bears the labels; 'Lectotype (purple) / TYPE / Charaxes jalysus C. & R. Felder LECTOTYPE det. R. L. Smiles 1978', and is here designated lectotype. The remaining pair bear the additional labels; 'Paralectotype (blue) / Charaxes jalysus C. & R. Felder PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. There are records in the BMNH for all months of the year except November, at altitudes up to 1000 m.

Polyura jalysus ephebus (Fruhstorfer)

(Fig. 140)

Eriboea jalysus ephebus Fruhstorfer, 1914: 722; Evans, 1927: 93. Holotype ♂, BURMA (BMNH) [examined].
Eriboea jalysus (Felder & Felder); Godfrey, 1930: 301.
Polyura jalysus ephebus (Fruhstorfer) Stichel, 1939: 572; Pinratana, 1979: 99, fig. N170a.

MALE, FEMALE. *Upperside.* Pale greenish yellow areas more extensive than in other subspecies. Forewing with pale area normally extending into discal cell. Hindwing with pale area extending along the veins to the admarginals, the black submarginal band being thereby reduced.

SIZE. ♂; $\bar{x} = 36{\cdot}3$, $s = 0{\cdot}8$ (40 specimens). ♀; 1 specimen only, 37·1.

DISTRIBUTION. **Burma**: Shan State, [Muong Gnow]; Karen Hills, Pattechaung, [Chataip]; Toungoo; Kawkareik, [Thingannyi], Sukli; Tenasserim, Dawna Range; Thaungyin Valley; East Pegu; Tavoy, [Meke]. **Thailand** (Siam): Nakhon Phanom, Tha Uthen; [Muok-Lek]; Mae Wong. 48 ♂, 1 ♀.

TYPE-MATERIAL. Represented in the BMNH by a male holotype which bears the following labels; 'Holotype (red) / Burma. / Moore Coll. 98–128. / B.M. TYPE No. Rh. 10795 E. jaysus ephebus ♂ Fruh. / Eriboea jalysus ephebus Fruh. HOLOTYPE det. R. L. Smiles 1977'.

BIONOMICS. There are records in the BMNH for January, February, March, April, May, July, July–November, September, October, November and December at altitudes between 150 and 1500 m.

Polyura jalysus triphonus (Fruhstorfer)

(Fig. 141)

Eriboea jalysus triphonus Fruhstorfer, 1914: 722, pl. 134b. LECTOTYPE ♂, SABAH (BMNH), here designated [examined].
Polyura jalysus triphonus (Fruhstorfer) Stichel, 1939: 573.

MALE. *Upperside.* Similar to *P. j. jalysus*, but with slightly more extensive pale greenish yellow areas which extend into the discal cell of the forewing, and along the veins towards the admarginals of the hindwings, although in neither case is this so great as in *P. j. ephebus*. The submarginal white spots of the hindwing are larger than in *P. j. jalysus*.

SIZE. ♂; $\bar{x} = 36{\cdot}3$, $s = 1{\cdot}4$ (24 specimens).

DISTRIBUTION. **Sabah**: Lawas; Kinabalu (Kina Balu). **Sarawak**: Bidi; Gunong Mulu National Park, W. Melinau Gorge. **Kalimantan**: Riv. Sintang; Pontianak; Pengaron. 25 ♂.

TYPE-MATERIAL. Described from an undisclosed number of specimens from 'North Borneo'. The type-series in the BMNH consists of four males, one of which bears the following labels; 'Lectotype (purple) / Nord-Borneo Lawas Februar A. Everett ex coll. H. Fruhstorfer / Type / Fruhstorfer Coll. B.M. 1937–285. / Eriboea jalysus triphonius Fruhstorfer LECTOTYPE det. R. L. Smiles 1978', and is designated lectotype. The remaining three males all bear the following labels; 'Paralectotype (blue) / Nord-Borneo ex coll. Fruhstorfer / Eriboea jalysus triphonius Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1978'. In addition two of these bear the additional label; 'Fruhstorfer Coll. B.M. 1937–285.', and one the label; 'Rothschild Bequest B.M. 1939–1.'.

BIONOMICS. A rare butterfly (Fruhstorfer, 1914: 722). It has been taken during March and December–February between 100 and 1200 m, and has been observed at urine on sand according to records in the BMNH.

Polyura delphis (Doubleday)

(Figs 49, 65, 127–131)

Charaxes delphis Doubleday, 1843: 217, pl. 7.
Murwareda delphis (Doubleday) Moore, [1896]: 266, pl. 190, figs 1, 1a.

Eulepis delphis (Doubleday) Rothschild & Jordan, 1899: 281, figs 40, 41, 42.
Eriboea delphis (Doubleday) Fruhstorfer, 1914: 723.
Polyura delphis (Doubleday) Stichel, 1939: 585; Lewis, 1974: 217, 150, fig. 2; Duckworth, Watson & Whalley, 1975: 267.

MALE, FEMALE. *Upperside.* Ground colour predominantly pale cream-yellow. Forewing apex black with a cream-yellow subapical spot often in cell R_5. Hindwing outer margin highly dentate, submarginal lunules black towards apex, becoming progressively grey-blue towards anal angle, this extending along the veins towards the outer margin and into the tails. *Underside.* Ground colour silver-white. Forewing with a row of submarginal yellow spots from cells R_5 to Cu_{1b}, that of cell Cu_{1b} being doubled, proximal to which is a row of grey-blue lunules. MI is present postdiscally in cells R_5 and M_1 just beyond the end of the discal cell in cell M_2, and fused with MII to form a grey-blue-centred, black circle in cell Cu_{1a}. DI is present only at the end of the discal cell, and MII is present just proximal to this in the discal cell which together with DI forms a grey-blue-centred semi-lunar marking. DII has been reduced to form two or three black spots in the discal cell. Hindwing admarginals yellow. A dentate blue line runs proximal to them and extends into the tails. A yellow band runs distally to the submarginal spots which, in cells R_1 to M_2, are yellow, and in cells M_3 to Cu_{1b} are red. The proximal circuli of the ocelli are grey-blue. MI and MII are fused to form a circle on the costal margin and often in cell R_1—these may or may not be grey-blue-centred. MI and MII are also joined to form a partial boundary around DI at the end of the discal cell. MI is also often present as a very thin black line in cells Cu_{1a}, Cu_{1b} and 2A.

Abdomen above cream-yellow, white beneath.

RANGE. From north-eastern India and Bangladesh through Burma, Thailand, West Malaysia and Singapore to the islands of Sumatra, Nias, Java, Borneo and Palawan.

Several subspecies have been described, some of which show only slight differences. However, as these differences seem fairly constant they are outlined below.

Polyura delphis delphis (Doubleday)

(Figs 127, 128)

Charaxes delphis Doubleday, 1843: 217, pl. 7. LECTOTYPE ♂, BANGLADESH (BMNH), here designated [examined].
Nymphalis delphis (Doubleday) Westwood, 1850: 309.
Eulepis delphis delphis (Doubleday) Rothschild & Jordan, 1899: 283, fig. 40.
Eriboea delphis delphis (Doubleday) Fruhstorfer, 1914: 723.
Polyura delphis delphis (Doubleday) Stichel, 1939: 585; Pinratana, 1979: 102, fig. N174a.

MALE, FEMALE. *Upperside.* Forewing with apical black area more restricted than in other races (except *P. d. nivea*), particularly in cells R_5, M_1 and M_2. In cell M_1 a residual black spot is often seen, sometimes completely separate from the black apex. Postdiscal spots of hindwing often larger.

SIZE. ♂; $\bar{x} = 45{\cdot}8$, $s = 2{\cdot}1$ (40 specimens). ♀; 2 specimens only, 55·9, and 48·3.

DISTRIBUTION. **India.** Sikkim. Assam: Khasi Hills; Cherrapunji; [Daleswari R.], North Lushai. Nagaland: Nichuguard, Naga Hills. Manipur: Cachar R.; Irang R.; [Lengba R.]. **Bangladesh**: Sylhet. **Burma**: Huckawng Valley; Sadon; Me Song; Karen Hills, Pattechaung; Toungoo; Tenasserim, [Tandong]; [Dahgwii]; Thandaung; [Ponsckai]; [Thoungeen]; Moulmein; Kawkareik; East Pegu; Kadan Kyun [King Island], Mergui; Tavoy; Foot of Downa Range; Ataran Valley, [Taungwaing]; Salween. **Thailand** (Siam): Phrae District, [Me Sai Song]; [Muok-Lek]; [Khao Sabab Hill], nr Chanthaburi; [Hot Spring, W. Siam]; Hin Lap. 103 ♂, 2 ♀.

TYPE-MATERIAL. *Charaxes delphis* Doubleday was described from an undisclosed number of specimens. One specimen in the BMNH bears the following labels; 'Silhet 45–33. / B.M. TYPE No. Rh. 10452. / Lectotype (purple) / Charaxes delphis Doubleday LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype.

BIONOMICS. There are records in the BMNH for all months of the year, at altitudes between 350 and 3200 m.

Polyura delphis concha (Snellen van Vollenhoven)

(Figs 49, 65)

Charaxes concha Snellen van Vollenhoven, 1861: 162, pl. 10, figs 1, 3; Butler, 1866: 635; de Nicéville & Martin, 1896: 433. LECTOTYPE ♂, SUMATRA (RNH, Leiden), here designated [examined].
Eulepis delphis concha (Snellen van Vollenhoven) Rothschild & Jordan, 1899: 284, fig. 41.
Eulepis delphis delphinion Fruhstorfer, 1904*d*; 75. Holotype ♂, BORNEO (BMNH), [examined]. **Syn. n.**
Eriboea delphis concha (Snellen van Vollenhoven) Fruhstorfer, 1914: 723, pl. 134c.
Eriboea delphis delphinion (Fruhstorfer) Fruhstorfer, 1914: 724.
Eulepis deephis (*sic*) *concha* (Snellen van Vollenhoven); Ellis, 1917: 107.
Polyura delphis concha (Snellen van Vollenhoven) Stichel, 1939: 586; Pinratana, 1979: 102, fig. N174b.

MALE, FEMALE. *Upperside*. Forewing with black subapical area more extensive than in the nominate subspecies, the subapical white spot reduced or obliterated. Hindwing submarginal lunules normally white-centred, clearly defined and black, or partly black in cells R_1, R_5 and M_1. *Underside*. Often with a blue-centred, black-ringed spot in cell R_1 extra to that on the costal margin.

The differences suggested by Fruhstorfer for *Eulepis delphis delphinion* are far from constant when applied to a more extensive sample than the type-series.

SIZE. ♂; $\bar{x} = 46{\cdot}8$, $s = 1{\cdot}3$ (40 specimens). ♀; 2 specimens only, 53·3 and 54·6.

DISTRIBUTION. **West Malaysia.** Kedah: Changlun, [Jalan Sintok]. Perak: [Ulu Ijok]; Sungei, Kelan [Klah]; Pelus R., K. Temoh, Sira Chior; Bukit Kutu; Ipoh. Negri Sembilan: Tampin. Pahang: [Gunong Tahan]. **Singapore**: [Straits Settlements]. **Sumatra**: Lebongtandai; [Begoemit]; Sibolga; [Quala Lemoerak]; [Kand^{s} Ampat, Pad. Benedenl]; Bila; [Selesseh]; Gajo Mts; Marang; Deli; Solok. **Kalimantan**: source of the Mahakam River; Pengaron, Martapura; Pontianak. **Sarawak**: Mt Dulit; Kuching; R. Kapah, trib. of R. Tinjar. **Sabah**: Silam, Darvel Bay; Labuan I.; Mt Kinabalu; Ibul [Bole, Brit. N. Borneo, Province Clarke]; Tenom; [Mt Marapok, Dent Province]. Untraced locality: [Marabuck R.]. 118 ♂, 3 ♀.

TYPE-MATERIAL. *Charaxes concha* Snellen van Vollenhoven was described from a series of three specimens, two from Java and the third from Sumatra. These three specimens are now in the RNH, Leiden. The male from Sumatra most closely resembles the figure in the original description, bears the following labels; 'Lectotype (purple) / Cat. N° 1. / ♂ / Ludeking Sumatra / Charaxes concha v. Voll type / Charaxes concha Snellen van Vollenhoven LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The remaining two males bear the following labels; 'Paralectotype (blue) / Cat. N° 1 [2] / Type / ♂ / Blume Java / Charaxes concha v. Voll type / Charaxes concha Snellen van Vollenhoven PARALECTOTYPE det. R. L. Smiles 1978'.

Eulepis delphis delphinion Fruhstorfer, was described from a 'type' from south Borneo and an undisclosed number of specimens from north and central Borneo. The holotype and two male paratypes are in the BMNH and bear the label; 'Fruhstorfer Coll. B.M. 1937–285.' In addition the holotype bears the following labels; 'Holotype (red) / Type / S. Borneo H. Fruhstorfer. / Eulepis delphis delphinion Fruhstorfer HOLOTYPE det. R. L. Smiles 1977. The paratypes bear the following labels; 'Paratype (yellow) / Eulepis delphis delphinion Fruhstorfer PARATYPE det. R. L. Smiles 1977. In addition one paratype bears the label; 'N. Borneo 1898, Wat.' and the other; 'Quellgebeit des Mahakam Flusses'.

BIONOMICS. In the BMNH there are records for January, February, March, May, June, July, August, November and December at altitudes between 130 and 1300 m.

EARLY STAGES. A poor black and white illustration of the larva appears in Morishita (1972: 6).

Polyura delphis othonis (Fruhstorfer)

(Fig. 129)

Eulepis delphis othonis Fruhstorfer, 1904*d*: 75. LECTOTYPE ♂, NIAS (BMNH), here designated [examined].
Eriboea delphis othonis (Fruhstorfer) Fruhstorfer, 1914: 724.
Polyura delphis othonis (Fruhstorfer) Stichel, 1939: 587.

MALE, FEMALE. *Upperside.* Hindwing with submarginal blue-grey lunules lacking the white pupil to be found in the nominate subspecies, normally not present in cell R_1 and almost obliterated in cell R_5. The lunule in cell M_1 is blue-grey, not black. *Underside.* Hindwing with ochreous submarginal band much broader than that of the nominate subspecies.

SIZE. ♂; $\bar{x} = 47{\cdot}1$, $s = 1{\cdot}0$ (14 specimens). ♀; one specimen only, 54·0.

DISTRIBUTION. **Nias**: Gunungsitoli; Orahili; [Dyma]; [Lalfago]; [Kalim Bungo]. 14 ♂, 1 ♀.

TYPE-MATERIAL. Described from one male and one female in the collection of Prof. Thieme, and one male in the Fruhstorfer collection. The last is now in the BMNH, bears the following labels; 'Lectotype (purple) / Type / Nias insula. / Fruhstorfer Coll. B.M. 1937–285. / Eulepis delphis othonis Fruhstorfer LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype.

BIONOMICS. In the BMNH there are records for January, February, March, May and September.

Polyura delphis cygnus (Rothschild)

(Fig. 130)

Charaxes concha Snellen van Vollenhoven, 1861: 162 [in part].
Eulepis delphis cygnus Rothschild, 1899: 285. LECTOTYPE ♂, JAVA (BMNH), here designated [examined].
Eriboea delphis cygnus (Rothschild) Fruhstorfer, 1914: 724.
Polyura delphis cygnus (Rothschild) Stichel, 1939: 587.

Both sexes with underside markings less prominent than in other subspecies.

SIZE. ♂; $\bar{x} = 45{\cdot}0$, $s = 1{\cdot}0$ (23 specimens). ♀; 5 specimens only, 49·8, 46·5, 49·6, 52·9 and 50·6.

DISTRIBUTION. **Java**: [Plaboan]; [Palabuan]; Pelabuhan Ratu; Mt Halimun; Mt Djampang; Sukabumi; Mt Gede; South Java; East Java. 23 ♂, 5 ♀.

TYPE-MATERIAL. Described from two males now in the BMNH. One specimen bears the following labels; 'Lectotype (purple) / Java occident Mons Gede 4000' 1896 H. Fruhstorfer. / E. delphis cygnus Roths. Type 1899. / Rothschild Bequest B.M. 1939–1. / Eulepis delphis cygnus Rothschild LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype. The remaining male bears the following labels; 'Paralectotype (blue) / Java occident Mons Gede 4000' 1896 H. Fruhstorfer. / Rothschild Bequest B.M. 1939–1. / Eulepis delphis cygnus Rothschild PARALECTOTYPE det. R. L. Smiles 1978'.

BIONOMICS. In the BMNH there are records for January, March, May, June and December at altitudes between 350 and 1600 m.

Polyura delphis nivea (Rothschild)

(Fig. 131)

Eulepis delphis niveus Rothschild, 1899: 286, fig. 42. LECTOTYPE ♂, PALAWAN (BMNH), here designated [examined].
Eriboea delphis niveus (Rothschild) Fruhstorfer, 1914: 724.
Polyura delphis niveus (Rothschild) Stichel, 1939: 587.

MALE, FEMALE. *Upperside.* Forewing with black apex more restricted than in any other subspecies. Hindwing underside lacking the spot in cell R_1 often found in *P. d. concha.*

SIZE. ♂; $\bar{x} = 43{\cdot}7$, $s = 2{\cdot}0$ (7 specimens). ♀; 1 specimen only, 46·8.

DISTRIBUTION. **Palawan**: Mt Languan. 7 ♂, 1 ♀.

TYPE-MATERIAL. Described from two males, one of which is in the BMNH and bears the following labels; 'Lectotype (purple) / Süd Palawan / Rothschild Bequest B.M. 1939–1. / Eulepis delphis niveus Rothschild LECTOTYPE det. R. L. Smiles 1978', and is hereby designated lectotype.

BIONOMICS. This is a rare butterfly, and in the BMNH there are only records for May and October.

Polyura posidonius (Leech)

(Figs 42, 58)

Charaxes posidonius Leech, 1891: 30; Leech, 1892: 127, pl. 14, fig. 4. LECTOTYPE ♂, China (BMNH), here designated [examined].
Charaxes clitiphon Oberthür, 1891: 12, pl. 2, fig. 11. LECTOTYPE ♂, China (BMNH), here designated [examined].
Murwareda posidonius (Leech) Moore, 1895: 267.
Eulepis posidonius (Leech) Rothschild & Jordan, 1899: 275, pl. 7, fig. 8.
Eriboea posidonius (Leech) Stichel, 1909: 170, pl. 52d; Fruhstorfer, 1914: 722.
Polyura posidonius (Leech) Stichel, 1939: 577; Lewis, 1974: 288, pl. 197, fig. 11.
Polyura posidonius clitiphon (Oberthür) Stichel, 1939: 577.

Male. *Upperside.* Forewing elongate, costal margin almost straight. Ground colour brown or black. A submarginal series of yellow spots is associated with the outer margin and is probably derived from the proximal part of the circuli of the ocelli. This derivation can more clearly be seen in *P. eudamippus*, *nepenthes*, and *narcaea* where the row is almost postdiscal. The discal band is pale yellowish green as is a double postdiscal patch in cells R_5 and M_1, and a spot in cell M_2 which lies just beyond the end of the discal cell. Hindwing shape rather square with margins smooth rather than dentate. Outer margin black, admarginals large and yellow, centres of tails and lines beyond the disco-basal patch in cell Cu_{1b} blue. Disco-basal patch pale yellowish green, containing a brown band running from the wing base to end diffusely in cell Cu_{1b}. *Underside.* Ground colour pale magenta. Forewing outer marginal band well-defined, brown as is an arcuate band which encompasses the pale green discal band on its proximal and anterior sides, the umbra, which likewise forms a well-defined band, and a triangular patch lying proximal to a light green patch in cells R_5 and M_1. This triangular patch and the arcuate band are distally bordered by a black line (MI). The arcuate band is projected upwards along the end of the discal cell, forming a Y-shape, which is distally bordered by DI. MII and DII do not delineate the proximal border of this band as is the case in *P. dolon*, *narcaea*, *eudamippus* or *nepenthes*, but are fragmented to form a scattering of small black spots in the discal cell. Hindwing with outer margin brown as in forewing, and a similarly coloured band running from the costal margin near the wing base to the postdiscal lunules in cell Cu_{1b}. This is delineated distally by MI, and proximally by MII. The admarginals are pale yellow, orange distally; tails blue centred. The postdiscal lunules are crimson, complete, proximally lilac or blue, and border onto a black line which also delineates the pale green discal patch, and above, a red-brown costal streak found only in this species. The anal pouch is largely pale green, peppered with minute black spots. A part of MI crosses vein 2A transversely here, almost reaching the anal margin.

Thorax black above, yellow streaked with black beneath. Abdomen black above and beneath. Genitalia valves often pale yellow.

Size. ♂; $\bar{x} = 39{\cdot}5$, $s = 1{\cdot}4$ (28 specimens).

Distribution. **China**: Tibet, [Fou-Lin]; Tibet, [Moenia]; Tibet, Ta Ho; Tibet, [Oua-Se, Yu-tong, Kitchang-Kou]; E. Tibet, [Posho]; Tsekou; Ta-Lou, [Yuin-Kin]; Ni-tou; Siao-Lou; K'ang-Ting [Ta-tsien-Lou]; Pa-Wo-Lung [Baurong]; Ta-Tu Ho Valley [Valée du Tong-Ho]; Wa-ssu-Kou; [Tchang-Kou]. 28 ♂.

Type-material. *Charaxes posidonius* Leech was described from three males which are now in the BMNH. Of these, two males bear the following labels; 'Wa-ssu-Kow, 5000 ft. Native coll. June 1890. / Leech Coll. 1901–173 / B.M. TYPE No. Rh. 10447[8]'. In addition, one male bears the labels; 'Lectotype (purple) / Type ♂ Leech / Charaxes posidonius Leech LECTOTYPE det. R. L. Smiles 1979', and is designated lectotype. The second of these two bears the additional label; 'Cotype ♂ Leech', and like the third specimen bears the labels; 'Paralectotype (blue) / Charaxes posidonius Leech PARALECTOTYPE det. R. L. Smiles 1979'. The third male bears the additional labels; 'Ni-tou, 5000 ft. Native coll. 1890. / Rothschild Bequest B.M. 1939–1.'.

Charaxes clitiphon Oberthür was described from an undisclosed number of specimens collected by R. P. Dubernard in Tsekou. One male now in the BMNH bears the labels; 'Lectotype (purple) / Thibet Tsekou R. P. Dubernard / Levick Bequest B.M. 1941–83. / Charaxes clitiphon Oberthür LECTOTYPE det. R. L. Smiles 1979', and is here designated lectotype.

Bionomics. Specimens in the BMNH have been collected during April, May, June and July, at altitudes from 1500 to 2900 m.

Polyura narcaea (Hewitson)

(Figs 50, 66, 132–137)

Nymphalis narcaeus Hewitson, [1854]: [87], pl. [44], figs 1, 4.
Eulepis narcaeus (Hewitson) Rothschild & Jordan, 1899: 277, pl. 7, figs. 9, 10.
Eriboea narcaea (Hewitson); Stichel, 1909: 170, pl. 52d; 1914: 722.
Polyura narcaeus (Hewitson) Stichel, 1939: 573.
Polyura narcaea (Hewitson); Lewis, 1974: 288, pl. 197, fig. 10.

MALE, FEMALE. *Upperside.* Ground colour brown or black, reduced by the enlargement of the pale yellowish green areas of the wings—submarginal spots, disco-basal patches etc.—to form a series of narrow bands, the most distinctive of which form a Y-shape at the end of the discal cell of the forewing. Forewing with submarginal spots enlarged, often separate, but sometimes merging to form a band. Discal cell pale yellowish green and forming a part of the disco-basal patch. Hindwing with outer margin black. A vestige of the admarginals showing yellowish orange is often seen; the tails are blue-centred. The remainder of the wing is pale yellowish green except for two black bands, the first well defined and running from the costal margin close to the apex, to the tornus where it contains some structural blue. The second band runs from the wing base, down cell Cu_{1b} parallel with the vein, to end at the tornus, and is much more faintly marked, sometimes absent. *Underside.* With pale green areas corresponding to the pale yellowish green areas of the upperside. Ground colour silvery white. Forewing with a well-defined brown band running along the outer margin, a similar band running along the costal margin, and a Y-shaped system of brown bands corresponding to those of the upperside. This system of bands is outlined distally by MI and DI, and proximally by MII as is the case in *P. eudamippus.* A further brown band runs from the costal band, past the end of the 'Y' and ends on the inner margin, being distally delineated with black. DII is either absent or reduced to form normally only one or exceptionally two or three small spots in the discal cell. Hindwing with outer margin brown; admarginals ochreous yellow but restricted. Submarginally there is a continuous series of black spots, one in each cell, two in cell Cu_{1b}. Postdiscal spots deep red, united to form a continuous band the inner edge of which is pinkish lilac and is bordered proximally by a black line. A brown band runs from the costal margin near the wing base and curves to end near the tornus. The anterior portion is delineated by MI and MII.

Abdomen black above, underside normally black but sometimes buff beneath.

RANGE. From Assam to China and in Taiwan, Vietnam, Burma and Thailand.

Polyura narcaea narcaea (Hewitson)

(Figs 50, 66, 132)

Nymphalis narcaeus Hewitson, [1854]: [87], pl. [44], figs 1, 4; Kirby, 1871: 271. LECTOTYPE ♂, CHINA: Shanghai (BMNH), here designated [examined].
Charaxes mandarinus Felder & Felder, [1867]: 437. LECTOTYPE ♂, CHINA: Shanghai (BMNH), here designated [examined].
Charaxes narcaeus (Hewitson) Lewis, 1879: 257; Leech, 1892: 126.
Charaxes narcaeus var. *thibetanus* Oberthür, 1891: 11, pl. 2, fig. 10; Leech, 1892: 127. LECTOTYPE ♂, CHINA: Ch'ang-yang (BMNH), here designated [examined].
Charaxes satyrina Oberthür, 1891: 13. LECTOTYPE ♂, CHINA: [Snowy Valley], nr Ning-po (BMNH), here designated [examined]. [Synonymized by Stichel, 1939: 574.]
Charaxes narcaeus var. *mandarinus* Felder & Felder; Leech, 1892: 127.
Murwareda narcaeus (Hewitson) Moore, [1896]: 267.
Murwareda mandarinus (Felder & Felder) Moore, [1896]: 267.
Murwareda tibetanus (sic) (Oberthür) Moore, [1896]: 267.
Eulepis narcaeus f. temp. *mandarinus* (Felder & Felder) Rothschild & Jordan, 1899: 280, pl. 7, fig. 10.
Eriboea narcaea f. *aemiliani* Fernández, 1912: 304, fig. 2. Syntype(s) (sex?), CHINA (no locality designated) (untraced), [not examined].
Eriboea narcaea w.s.f. *mandarinus* (Felder & Felder) Stichel, 1909: 170, pl. 52d; Fruhstorfer, 1914: 722.
Eriboea narcaea ab. *thibetana* (Oberthür) Stichel, 1909: 170, pl. 52d.
Eriboea narcaea f. *thibetana* (Oberthür); Fruhstorfer, 1914: 722.
Eriboea narcaeus richthofeni Fruhstorfer, 1915: 38. LECTOTYPE ♂, CHINA: Tsingtao (BMNH), here designated [examined].

Eriboea narcaeus richthofeni f. *arna* Fruhstorfer, 1915: 38. LECTOTYPE ♂, CHINA: Tsingtao (BMNH), here designated [examined].
Eriboea narcaea abrupta Röber, 1925: 168. Syntype(s) (sex?), [CHINA] ('Mongolei') (probably in MNHU, Berlin) [not examined]. **Syn. n.**
Eriboea narcaea acuminata Lathy, 1926: 96, pl. 3, fig. 1; Bollow, 1930: 195. Holotype ♂, CHINA: Yunnan (MNHN, Paris) [colour transparencies of upper and undersides examined]. **Syn. n.**
Eriboea narcaea ab. *marginepunctatus* Lathy, 1926: 96, pl. 3, fig. 3. Holotype ♂, CHINA: Chiang-nan (MNHN, Paris) [colour transparencies of upper and undersides examined].
Eriboea narcaea ab. *intermedia* Lathy, 1926: 96, pl. 3, fig. 2; Bollow, 1930: 195. Holotype ♂, CHINA: Tung-men (MNHN, Paris) [colour transparencies of upper and undersides examined].
Eriboea narcaea (Oberthür); Bollow, 1930: 195.
Eriboea narcaea ab. *aemiliani* Fernández; Bollow, 1930: 195.
Eriboea narvaea ab. *marginepunctata* Lathy; Bollow, 1930: 195.
Eriboea narcaea w.s.f. *richthofeni* Fruhstorfer, Bollow, 1930: 195.
Eriboea narcaea d.s.f. *arna* Fruhstorfer; Bollow, 1930: 195.
Polyura narcaeus (Hewitson) Stichel, 1939: 573.
Polyura narcaeus f. temp. *mandarinus* (Felder & Felder) Stichel, 1939: 574.
Polyura narcaeus f. temp. *aemiliani* (Fernández) Stichel, 1939: 575.
Polyura narcaeus f. *marginepunctatus* (Lathy) Stichel, 1939: 575.
Polyura narcaeus thibetanus (Oberthür) Stichel, 1939: 575.
Polyura narcaeus thibetanus f. *intermedia* (Lathy) Stichel, 1939: 575.
Polyura narcaeus acuminata (Lathy) Stichel, 1939: 576.
Polyura narcaeus abrupta (Röber) Stichel, 1939: 576.
Polyura narcaeus richthofeni (Fruhstorfer) Stichel, 1939: 576.
Polyura narcaeus richthofeni f. *arna* (Fruhstorfer) Stichel, 1939: 576.

MALE, FEMALE. *Upperside.* Forewing with submarginal spots extending into cell R_4 and situated closer to the apex than in other subspecies. Hindwing with tornus having the two white spots proximal to the yellow admarginal bar suppressed, particularly in the male. *Underside.* Brown bands of both wings often paler than in *P. n. meghaduta.*

There are two, probably seasonal, forms. A dark form (f. *mandarinus*) has the discal cell of the forewing upperside brown, and this extending to the inner margin: the brown band running from the base of the hindwing upperside to the tornus is well marked. A pale form (f. *narcaea*) does not have the discal cell of the forewing upperside filled with brown, and the band of the hindwing upperside is less well marked or absent.

Eriboea narcaea abrupta Röber was described from a pale specimen supposedly captured in Mongolia, but more probably from northern China. From a study of the description it would seem that it falls within the range of variation exhibited by this subspecies.

Eriboea narcaea acuminata Lathy was likewise described from a pale form falling within the range of variation exhibited by this subspecies.

SIZE. ♂; $\bar{x} = 40{\cdot}1$, $s = 2{\cdot}2$ (40 specimens). ♀; $\bar{x} = 44{\cdot}9$, $s = 2{\cdot}6$ (32 specimens).

DISTRIBUTION. **China**: Chiang-nan; Tung-men (Lathy, 1926: 96); Shandong, Ch'ing-tao [Tsingtau]; Shandong, [Jant'ai-Kiautschou]; Wa-ssu-Kou; [Tchang-Kou]; Shanghai; Ning-po; nr Ning-po, [Snowy Valley]; K'un-shan; S. Chekiang, Pi-hu-chen [Pihu], W. of Wen-chou; Zhejiang province, Ta-k'eng-ts'un [Takeng Tou]; N.W. Fujian; Chiu-chiang; Western Hu-pin; Ch'ang-yang; Ichang [Wychang]; Nan-ch'uan, southern Ssu-ch'uan shang [Szuch'uan]; Lo-shan [Kia-Ting-Fu]; Ssu-ch'uan shang [Suchwan], Kuan-hsien district; Pao-hsing [Mou-Pin]; K'ang-Ting [Ta-tsien-lou]; [Chia-Kou-Ho]; [Pa Tse Fang]; [Ta Tong Kiao]; Siao Lou; S. of Siao-Lou, [Se Pin—Lou Chan, Ya Tcheou]; S.W. of Siao Lou, [Kiong Tchéou]; W. of Yaan, [Tien-Tsuen, Yuin-Kin]; [Tay-Tou-Ho]; [Chow-pin-sa]; N. of Chungtien, [Siao-Ouisi]; nr Paoshan, [Wuin-Kin]; [Fou-Lin]; Tibet, Ta-Ho; [Moenia]. 351 ♂, 32 ♀.

TYPE-MATERIAL. *Nymphalis narcaeus* Hewitson is represented in the BMNH by a single male specimen which bears the following labels; 'Lectotype (purple) / Shanghai 54.8. / B.M. TYPE No. Rh. 10451 Nymphalis narcaeus ♂ Hew. / Nymphalis narcaeus Hewitson LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype.

Charaxes mandarinus Felder & Felder is represented in the BMNH by a male specimen which bears the following labels; 'Lectotype (purple) / Shanghai Muirhead type / FELDER COLL.N / TYPE of mandarinus / Rothschild Bequest B.M. 1939–1. / Charaxes mandarinus Felder & Felder LECTOTYPE det. R. L. Smiles 1979', and is designated lectotype.

Charaxes narcaeus var. *thibetanus* Oberthür is represented in the BMNH by a male specimen which bears the following labels; 'Lectotype (purple) / Chang-yang. Pratt. / Charaxes narcaeus thibetanus figurè dans la XV^e^-liv^re^ Etud. d'Entomolog. des Juni 1891. / Levick Bequest B.M. 1941–83, / Charaxes narcaeus var. thibetanus Oberthür LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype.

Charaxes satyrina Oberthür is represented in the BMNH by a single male specimen which bears the following labels; 'Lectotype (purple) / Chine / Satyrina Butler sp. nov. W. B. P. Snowy Valley / Levick Bequest 1941–83 / Charaxes satyrina Oberthür LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype.

Eriboea narcaeus richthofeni Fruhstorfer is represented in the BMNH by two males and one female, all of which bear the following label; 'Fruhstorfer Coll. B.M. 1937–285.' In addition one male bears the following labels; 'Lectotype (purple) / Tsingtau Fruhstorfer / Type / Eriboea narcaeus richthofeni Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining pair bear the additional labels; 'Paralectotype (blue) / Eriboea narcaeus richthofeni Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1979'. Of these the male bears the label; 'Tsingtau Dtsch.-China', whilst the female bears the labels; 'Tsingtau Fruhstorfer / Type'.

Eriboea narcaeus richthofeni f. *arna* Fruhstorfer is represented in the BMNH by a male and a female which bear the following labels; 'Type / Tsingtau Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285.'. In addition the male bears the following labels; 'Lectotype (purple) / Eriboea narcaeus richthofeni f. arna Fruh. LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The female bears the additional labels; 'Paralectotype (blue) / Eriboea narcaeus richthofeni f. arna Fruh. PARALECTOTYPE det. R. L. Smiles 1979'.

BIONOMICS. There are records in the BMNH for January, April, May, June, July and August at altitudes from 300 to 1800 m. Stichel (1909: 170) gives, 'April to August, in 2 broods'.

Polyura narcaea menedemus (Oberthür) stat. n.

(Fig. 133)

Charaxes satyrina menedemus Oberthür, 1891: 13, pl. 2, fig. 9. LECTOTYPE ♂, CHINA: Tsekou (BMNH), here designated [examined].
Charaxes narcaeus var. *menedemus* Oberthür; Leech, 1892: 126.
Murwareda menedemus (Oberthür) Moore, [1896]: 267.
Eriboea narcaea ab. *menedemus* (Oberthür) Stichel, 1909: 170.
Eriboea narcaea d.s.f. *menedemus* (Oberthür); Fruhstorfer, 1914: 722.
Eriboea narcaeus thibetanus f. *menedemus* (Oberthür); Fruhstorfer, 1915: 39.
Polyura narcaeus thibetanus f. temp. *menedemus* (Oberthür) Stichel, 1939: 575.

MALE. *Upperside.* Similar to the pale form of *P. n. narcaea* with the submarginal spots of the forewing extending into cell R_4, but with these displaced away from the wing apex. Hindwing with tails much shorter than in that subspecies; white spots present at tornus.

There is some doubt as to whether this is a distinct subspecies due to an apparent overlap in distribution with the previous subspecies; however, of the four localities which are duplicated, 'Ta-tsien-lou', Siao-Lou and 'Siao-Ouisi' are, I believe, doubtful, and the fourth, 'Moenia', I have as yet not traced.

SIZE. ♂; $\bar{x} = 35{\cdot}4$, $s = 2{\cdot}6$ (40 specimens).

DISTRIBUTION. **China**: K'ang-Ting [Ta-tsien-lou]; N. of Chungtien [Siao-Ouisi]; [Moenia] (see above); [Lou-tse-Kiang]; Tsekou; Yunnan, Wei-hsi N. Yunnan, [Wei-Si-Bahand]; Yunnan, [Tsetchong]; Yunnan, Tali. 419 ♂.

TYPE-MATERIAL. Described from Tsekou and collected by R. P. Dubernard, but the types otherwise undistinguished. Two males in the BMNH bear the label; 'Levick Bequest 1941–83'. Of these, one bears the additional labels: 'Lectotype (purple) / Thibet Tsekou R. P. Dubernard / Charaxes var menedemus Obthr. l'un des 2 exemplaires qui outreroi de modèle à la planche des

liv[res] XV. des Etud. d'Entom Juin 1891. / Charaxes satyrina menedemus Oberthür LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining male bears the additional labels; 'Paralectotype (blue) / Charaxes Menedemus Obthr (le 2[n] specimen typicum). / Charaxes satyrina menedemus Oberthür PARALECTOTYPE det. R. L. Smiles 1979'.

BIONOMICS. Only a few specimens in the BMNH bear information other than the locality and the collector; however, those that do give months of capture of January, May to June and June.

Polyura narcaea meghaduta (Fruhstorfer)

(Fig. 134)

Eriboea narcaeus meghaduta Fruhstorfer, 1908: 127. LECTOTYPE ♂, TAIWAN (BMNH), here designated [examined].
Eriboea narcaea var. *formosana* Moltrecht, 1909: 132. Syntypes (sex?), TAIWAN (untraced) [not examined]. [Synonymized by Stichel, 1939: 577.]
Eriboea narcaea meghaduta Fruhstorfer; Fruhstorfer, 1914: 722, pl. 135a.
Eriboea narcaea meghaduta ab. *pallida* Lathy, 1926: 96, pl. 3, fig. 5. LECTOTYPE ♂, TAIWAN (MNHN, Paris), here designated [colour transparencies of upper and underside examined].
Polyura narcaeus meghaduta (Fruhstorfer) Stichel, 1939: 576; Okano & Ohkura, 1959: 45, pl. 44, fig. 136.
Polyura narcaeus meghaduta f. *pallida* (Lathy) Stichel, 1939: 577.
Polyura narcaea meghaduta (Fruhstorfer); Shirôzu, 1960: 253, pl. 59, figs 534–536, text-figs 282, 283.

MALE. As large as *P. n. narcaea*. *Upperside*. Submarginal spots in forewing not extending beyond cell R_5 and displaced anteriorly from the wing apex. Hindwing with tails as in *P. n. narcaea*; white spots present at tornus. *Underside*. With brown bands often darker than in nominate subspecies. Pale green bands and spots almost white. Forewing discal cell with black spots (DII) large, often forming an irregular bar.

SIZE. ♂; $\bar{x} = 39{\cdot}2$, $s = 1{\cdot}2$ (31 specimens).

DISTRIBUTION. **Taiwan** (Formosa): [Chip Chip]; Chi-chi [Kasumigaseki, Shūshū]; [Shuisha]; [Kiayih]; Pu-li [Horisha]. 31 ♂.

TYPE-MATERIAL. *Eriboea narcaeus meghaduta* Fruhstorfer was described from three males which are now in the BMNH. All bear the following label; 'Fruhstorfer Coll. B.M. 1937–285.'. In addition, one male bears the labels; 'Lectotype (purple) / Type / CHIP CHIP VI 08 / Eriboea narcaeus meghaduta Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The two remaining specimens each bear the additional labels; 'Paralectotype (blue) / Eriboea narcaeus meghaduta Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1979'. In addition, one male bears the labels; 'Formosa, Regenzeit Fruhstorfer / CHIP CHIP 16–31 VII 08', whilst the other bears the labels; 'Formosa Regenzeit Fruhstorfer / CHIP CHIP VI 08'.

Eriboea narcaea meghaduta ab. *pallida* Lathy was described from two males. I have seen photographs of one of these, now in the MNHN, Paris, which bears the following labels; 'ILE DE FORMOSA / Eriboea narcaea ♂ meghaduta ab. pallida, Lathy, Spec. typicum', and it is hereby designated lectotype.

BIONOMICS. Specimens in the BMNH were collected during May, June and July. One specimen was captured at 600 m. Fruhstorfer (1914: 722) states, 'Time of flight June at an elevation of about 1000 m.'.

Polyura narcaea aborica (Evans)

(Fig. 135)

Eriboea narcaeea (sic) *aborica* Evans, 1924: 896, pl. 17, fig. F2.8. LECTOTYPE ♂, INDIA: N.E. Assam (BMNH), here designated [examined].
Eriboea narcaea aborica Evans; Evans, 1927: 94, pl. 17, fig. F2.8.
Polyura narcaeus aborica (Evans) Stichel, 1939: 576.

MALE. *Upperside*. Forewing with submarginal spots as in *P. n. meghaduta*. Hindwing with postdiscal black band blue-centred up to cell M_2, and narrower than in *P. n. thawgawa*.

SIZE. ♂; 2 specimens only, 34·1, 35·4.

DISTRIBUTION. **India**: Arunachal Pradesh? ('S.E. Thibet, Shemo R.'); Assam, Abor. 3♂.

TYPE-MATERIAL. Represented in the BMNH by three males, one of which bears the following labels; 'Lectotype (purple) / ASSAM: Abor. 5,500 ft. 4.vi.1913. W. H. Evans. / Brit. Mus. 1935–7. / Eriboea narcaea aborica Evans LECTOTYPE det. R. L. Smiles 1979', and is designated lectotype. The remaining two males bear the following labels; 'Paralectotype (blue) / Eriboea narcaea aborica Evans PARALECTOTYPE det. R. L. Smiles 1979'. In addition, one male bears the following labels; 'E. narcaea Shimo R. E. Tibet 2600' Bailey Exped'n 8.6.13 / ex coll. Hannyngton. / Rothschild Bequest 1939–1.', whilst the other male bears the additional labels; 'S.E. Thibet Shemo R. 2600 8.6.13 / Maj. F. M. Bailey Br. Mus. 1923–375 / B.M. TYPE No. Rh. 10450 E. narcaeus aborica ♂, Evans.'.

BIONOMICS. No information other than that with the types.

Polyura narcaea thawgawa (Tytler) **comb. n.**

(Fig. 136)

Eriboea narcaea thawgawa Tytler, 1940: 109. LECTOTYPE ♂, BURMA (BMNH), here designated [examined].

MALE. Larger than *P. n. lissainei* with specimens from Vietnam the largest of all. *Upperside.* Forewing submarginal spots similar to but normally larger than those of *P. n. aborica*, *lissainei* or *meghaduta*. Hindwing with black postdiscal band darker and thicker than in *P. n. aborica* or *lissainei*, and mostly lacking a blue centre. Tails normally long; white spots present at tornus, but less well marked than in either *P. n. aborica* or *lissainei*.

SIZE. ♂; $\bar{x} = 34{\cdot}4$, $s = 2{\cdot}0$ (22 specimens).

DISTRIBUTION. **Burma**: Adung Valley; Haungtharaw Valley; Htawgaw. **Vietnam**: Tongking, [Ngai-Tio]. 23♂.

TYPE-MATERIAL. Described from a large series of males from Htawgaw. Of ten males in the BMNH, one bears the following labels; 'Lectotype (purple) / Htawgaw 5–8000' 1–7–$\frac{6}{27}$ / BURMA: Htawjaw. 5–8000ft. 1–7–vi–1927. H. C. Tytler. B.M. 1938–678 / Eriboea narcaea thawgawa Tytler LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining nine males all bear the following labels; 'Paralectotype (blue) / Eriboea narcaea thawgawa Tytler PARALECTOTYPE det. R. L. Smiles 1979'. Eight of these bear the label; 'Htawgaw 5–8000' 1–7–$\frac{6}{27}$'. Of these, seven bear the additional label; 'H. C. Tytler Coll. Brit. Mus. 1941–92', one the label; 'Brit. Mus. 1925–77', and one the labels; 'Hthawgaw N.E. Burma 9.6.27 / H. C. Tytler Coll. Brit. Mus. 1941–92.'.

BIONOMICS. Specimens in the BMNH were captured during April, May and June, at altitudes between 1500 and 2450 m.

Polyura narcaea lissainei (Tytler)

(Fig. 137)

Eulepis lissainei Tytler, 1914: pl. 1, fig. 4; Tytler, 1915: 502. LECTOTYPE ♂, INDIA: Naga Hills (BMNH), here designated [examined].
Eriboea narcaeus lissainei (Tytler) Evans, 1924: 896, pl. 17, fig. F2.8; 1927: 94, pl. 17, fig. F2.8.
Eriboea narcaea licsonei (sic) (Tytler); Röber, 1925: 169.
Polyura narcaeus lissainei (Tytler) Stichel, 1939: 576.

The smallest of the subspecies.

MALE. *Upperside.* Forewing submarginal spots similar to those of *P. n. meghaduta* and *aborica*. Hindwing with black postdiscal band narrower and less well defined than in other subspecies, blue-centred only up to vein Cu_{1a} at the most. Tails long; pale spots very large at tornus.

SIZE. ♂; $\bar{x} = 31{\cdot}6$, $s = 0{\cdot}9$ (40 specimens).

DISTRIBUTION. **Thailand** (Siam): Bangkok. **India**: Naga Hills, Kohima; Naga Hills, [Kirbari]; Naga Hills, [Jakama]; Naga Hills, [Phesima]; [Di Chu]. 55 ♂.

TYPE-MATERIAL. Described from 16 males which are now in the BMNH. One male bears the following labels; 'Lectotype (purple) / Phesima, Naga Hills, May 1914 (Col. Tytler) / Rothschild Bequest B.M. 1939–1. / Eulepis lissainei Tytler LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. All the remaining specimens bear the following labels; 'Paralectotype (blue) / Eulepis lissainei Tytler PARALECTOTYPE det. R. L. Smiles 1979'. In addition, two bear the labels; 'Phesima Naga Hills 5–7000' 4.13 / H. C. Tytler Coll. Brit. Mus. 1941–92', two the labels; 'Phesima Naga Hills. 5–7000' 5.13 / H. C. Tytler Coll. B.M. 1941–92.', one the labels; 'Phesima, Naga Hills, May 1914 (Col. Tytler) / Rothschild Bequest B.M. 1939–1.', one the labels; 'Phesima Naga Hills 5–7000' 4.13 / Rothschild Bequest B.M. 1939–1.', two the label; 'Phesima, Naga Hills. Assam. 5.1914 Col. H. C. Tytler. 1918–61', two the labels; 'Phesima, Naga Hills. H. T. Tytler / Phesima 5.14.', one the labels; 'Phesima 5.14 Manipur H. C. Tytler / Archibald Coll. B.M. 1926–391.', and four the labels; 'E. lissainei ♂ Phesima 5–14 / H. C. Tytler Coll. Brit. Mus. 1941–92'.

BIONOMICS. Specimens in the BMNH have been captured during April, May, June, July and August, at altitudes between 1400 and 2100 m.

Polyura eudamippus (Doubleday)

(Figs 6, 46–48, 62–64, 154–159)

Charaxes eudamippus Doubleday, 1843: 218, pl. 8; de Nicéville, 1886: 273.
Eulepis eudamippus (Doubleday) Rothschild & Jordan, 1898: pl. 8, figs 1–6, pl. 13, figs 15, 16; 1899: 263.
Eriboea eudamippus (Doubleday) Fruhstorfer, 1914: 722, pl. 134d.
Polyura eudamippus (Doubleday) Stichel, 1939: 577; Lewis, 1974: 271, pl. 150, fig. 3; Duckworth, Watson & Whalley, 1975: 267, figs 236d, e; Morishita, 1977: 3, figs 1, 3, 4, 6, 8–14.

MALE, FEMALE. *Upperside.* Ground colour black. Forewing with pale markings light yellow. A submarginal series of pale spots and a postdiscal series of larger pale spots are present. A discal spot lies at the end of the discal cell in cell M_2, and beyond this, in cells M_1 and R_5, lie two similar, but smaller spots. The discal band, or disco-basal patch runs from vein M_3 to the inner margin. Hindwing outer margin dentate, black; tails long and blue-centred. Admarginals yellow, blue, or mixed. Submarginal spots white, the largest in cell R_1, and becoming smaller towards cell Cu_{1b}. Disco-basal patch pale yellow, covering most of the wing, and lying adjacent to a series of blue-glaucous chevrons (derived from the externae of the ocelli). A brown, loosely defined band often runs from the base of the wing to the tornus, as in *P. narcaea*, and *posidonius*. *Underside.* Ground colour silvery white. White patches and spots correspond to the pale yellow ones of the upperside. Forewing with a well-defined green-yellow band running along the outer margin, and a Y-shaped system of similarly coloured bands lying at the end of, and outlining part of the discal cell, as in *P. posidonius* and *narcaea*. As is the case in the latter, this system of bands is outlined distally by MI and DI, and proximally by DII. Like *P. dolon* or *narcaea*, there is a costal band. A further greenish yellow band runs from the costal margin, past the end of the 'Y' and ends on the inner margin, distally bordering a complete series of black chevrons. DII is reduced to form two black spots in the discal cell. Hindwing admarginals greenish yellow, yellow at tornus. Submarginal spots black, white proximally. Postdiscal spots, unlike those of *P. posidonius* or *narcaea*, are chevron-shaped, black-outlined, and lie on the distal edge of a greenish/yellow band which runs from the costal margin to the anal margin just above the tornus, and it is this colour which shows through to the centre of the spots. A yellow band runs from the costal margin near the wing base and curves to end near the tornus. The anterior portion is delineated by MI and MII.

Male with abdomen white or brown above, white or partly white beneath. Female with abdomen white or brown above and brown beneath.

RANGE. From northern and eastern India and Bangladesh, south through Burma, Thailand, Laos, Cambodia, Vietnam to West Malaysia, and east to China, Hainan, Taiwan and Okinawa.

Polyura eudamippus eudamippus (Doubleday)

(Figs 46, 62, 154)

Charaxes eudamippus Doubleday, 1843: 218, pl. 8; Gillmer, 1906: 23. LECTOTYPE ♂, BANGLADESH (BMNH), here designated [examined].

Nymphalis eudamippus (Doubleday) Westwood, 1850: 309; Kirby, 1871: 271; Staudinger, 1886: 173, pl. 59.
Eulepis eudamippus (Doubleday) Swinhoe, 1893: 289.
Eulepis eudamippus eudamippus (Doubleday); Rothschild & Jordan, 1898: pl. 8, fig. 1; 1899: 265.
Eriboea eudamippus eudamippus (Doubleday) Fruhstorfer, 1914: 722, pl. 134d; Evans, 1924: 896; 1927: 94.
Eulepis endamippus (sic) (Doubleday); Antram, 1924: 130, fig. 264.
Polyura eudamippus [*eudamippus*] (Doubleday) Stichel, 1939: 577.
Polyura eudamippus eudamippus (Doubleday); Morishita, 1977: 3, fig. 1.

MALE, FEMALE. *Upperside.* Forewing with discal cell yellow, wing base only slightly brown. Hindwing with submarginal black band narrow, more like a series of conjoined ocelli, containing large submarginal white spots. No brown band present running from the wing base to the tornus.

Underside with yellow bands paler than in *P. e. peninsularis, formosana, whiteheadi,* or *rothschildi.* Hindwing postdiscal chevrons rather more blue-centred than in some subspecies.

SIZE. ♂; $\bar{x} = 49{\cdot}3$, $s = 1{\cdot}9$ (40 specimens). ♀; $\bar{x} = 58{\cdot}4$, $s = 2{\cdot}4$ (21 specimens).

DISTRIBUTION. **India**: Nepal; Darjeeling; Gangtok; Kurseong; Lachen Lachung; Tumlong; Sikkim, [Phedong]; Sikkim, [Troomling]; Bhutan; [Rani st]; upper Assam, Margherita; Khasi Hills, Cherrapunji; Garo Hills; Assam, Shillong; Jaintia Hills; Abor Hills; Manipur, Imphal; Naga Hills, [Jakama]; Naga Hills, Nichuguard; Naga Hills, Tamlu. **Bangladesh**: Sylhet. 202, ♂, 22 ♀.

TYPE-MATERIAL. Described from an unspecified number of syntypes from Sylhet. These are represented in the BMNH by three males and two females. One male bears the following labels; 'Lectotype (purple) / Silhet / B.M. TYPE No. Rh. 10442. / Charaxes eudamippus Doubleday LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining specimens all bear the following labels; 'Paralectotype (blue) / Charaxes eudamippus Doubleday PARALECTOTYPE det. R. L. Smiles 1979'. Of these, one male bears the additional label; 'Silhet', one female the labels; 'Silhet / Silhet. Bought from Sowerby 45.33.', and one male the labels; 'Silhet. donée par M. Doubleday. / Ex Musaeo Arch. Guenée'.

BIONOMICS. Specimens in the BMNH have been captured during March to April, April, May, June, July, August, September and October at altitudes up to 1800 m. Several specimens from Lachen Lachung were supposedly collected between 2450 and 4900 m. Rothschild & Jordan (1899: 265) record that this subspecies is found commonly in the beds of streams, while Fruhstorfer (1914: 722) records that it is 'Common in the hot valleys of Sikkim'.

EARLY STAGES. Egg; spherical with longitudinal ribs and weak transverse ribbing, approximately 1·6 mm diameter (Gillmer, 1906: 23).

Polyura eudamippus nigrobasalis (Lathy)

(Fig. 155)

Charaxes nigrobasalis Lathy, 1898: 192. LECTOTYPE ♂, THAILAND (BMNH), here designated [examined].
Eulepis eudamippus (Doubleday); Rothschild & Jordan, 1898: pl. 8, figs 2, 3.
Eulepis eudamippus nigrobasalis (Lathy) Rothschild & Jordan, 1899: 266.
Eriboea eudamippus jamblichus Fruhstorfer, 1914: 722; Evans, 1924: 896; 1927: 94. LECTOTYPE ♂, BURMA (BMNH), here designated [examined]. **Syn. n.**
Eriboea eudamippus nigrobasalis (Lathy) Fruhstorfer, 1914: 722; Evans, 1924: 896, pl. 17, fig. F2. 10; 1927: 94, pl. 17, fig. F2. 10.
Eriboea eudamippus celetis Fruhstorfer, 1914: 722. Holotype ♂, VIETNAM (BMNH) [examined].
Eriboea eudamippus nigra Lathy, 1926: 97. Holotype ♂, LAOS (MNHN, Paris) [colour transparencies of upper and underside examined].
Eriboea eudamippus major Lathy, 1926: 97. LECTOTYPE ♂, VIETNAM (MNHN, Paris), here designated [colour transparencies of upper and underside examined]. **Syn. n.**
Polyura eudamippus jamblichus (Fruhstorfer) Stichel, 1939: 579; Morishita, 1977: 12, fig. 13.
Polyura eudamippus nigrobasalis (Lathy) Stichel, 1939: 579; Morishita, 1977: 12, fig. 11; Pinratana, 1979: 100, fig. N171b.
Polyura eudamippus nigra (Lathy) Stichel, 1939: 580.
Eriboea eudamippus splendens Tytler, 1940: 110. LECTOTYPE ♂, BURMA (BMNH) here designated [examined]. **Syn. n.**

Eriboea eudamippus chota Tytler, 1940: 110. Holotype ♂, BURMA (BMNH) [examined]. **Syn. n.**
Polyura eudamippus major (Lathy) Stichel, 1939: 580; Morishita, 1977: 12.

MALE. *Upperside.* Forewing with discal cell black or pale yellow with all degrees of intermediate. Hindwing with submarginal black band broader than in *P. e. eudamippus*, and markedly broader at the wing apex than at the tornus, with submarginal white spots generally smaller than those of *P. e. eudamippus*, but larger than those of *P. e. cupidinius*, *peninsularis*, *whiteheadi*, *formosana* or *rothschildi*. Admarginals normally yellow, sometimes glaucous towards the distal edge. Only the smallest hint of a brown band running from the wing base to the tornus in even the darkest specimens. *Underside.* Postdiscal chevrons sometimes completely blue-centred.

Possible subspeciation in Burmese (*chota*, *spendens*, *jamblichus*), Vietnamese (*celetis*, *major*), and Laotian (*nigra*) populations appears tenuous, named subspecies being based on a few individuals showing such differences in character as colour of abdomen, width of hindwing band etc. It can be seen from a sufficiently long series that butterflies from the same locality exhibit a high degree of variation of these characters. In view of this the above taxa are treated here as synonyms.

SIZE. ♂; $\bar{x} = 47{\cdot}0$, $s = 4{\cdot}1$ (40 specimens).

DISTRIBUTION. **Vietnam**: Tongking, [Ngai-Tio]; [Riviere Noire]; Xom Giong. **Laos**: [Pak Munung]; Cataracts of Xé Kong [Sekong] R.; [Muang Baw]. **Cambodia**: Phnom Penh. **Thailand** (Siam): Khlong Khlung; [Pak-a-jong]; [Prachuap Prov., Pak Tawan]; Pak Chong; Hin Lap; [Hue Tak So]; [Muok Lek]; [Mae Melong Forest]; [Melanoung, Hot Springs]. **Burma**: Salween District, Papun to [Mai-hong-song]; Tavoy; Dawna Range. Tenasserim; Ataran Valley, [Kwi kalon], Haungtharaw Valley, Tenasserim; East Pegu; Bassein; Pattechaung, Karen Hills; Gokteik; Upper Mekong, Shan States; [Muong Gnow], Shan States; Loimwe, Shan States; Maymyo, N. Shan States; [Meetan]; Me Song; N. Chin Hills; East Bhamo District; Katha; Sadon; Hukawng Valley, [Muenghi Hill Tracts]; Nampandet; [Gole Tutap]; Htawgaw. 117♂.

TYPE-MATERIAL. *Charaxes nigrobasalis* Lathy was described from two males which are now in the BMNH, and which bear the following labels; 'Pak-a-jong. Siam / B.M. TYPE No. Rh. 10591[2]'. In addition, one male bears the labels; 'Lectotype (purple) / Adams Bequest B.M. 1912–399. / Charaxes nigrobasalis Lathy LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining male bears the additional labels; 'Paralectotype (blue) / Charaxes nigrobasalis Lathy PARALECTOTYPE det. R. L. Smiles 1979'.

Eriboea eudamippus jamblichus Fruhstorfer was described from an unspecified number of males from Tenasserim. One specimen in the BMNH bears the following labels; 'Lectotype (purple) / Type / Lower Burma Fruhstorfer. / Fruhstorfer Coll. B.M. 1937–285. / Eriboea eudamippus jamblichus Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is designated lectotype.

Eriboea eudamippus celetis Fruhstorfer was described from an unspecified number of specimens of which one was indicated as the 'type'. There are two males in the BMNH which bear the following labels; 'Süd-Annam Xom-Gom Februar H. Fruhstorfer / Rothschild Bequest B.M. 1939–1.'. One of these bears the additional labels; 'Holotype (red) / Type (red) / Eriboea eudamippus celetis Fruhstorfer HOLOTYPE det. R. L. Smiles 1977'. The other male bears the additional labels; 'Paratype (yellow) / Eriboea eudamippus celetis Fruhstorfer PARATYPE det. R. L. Smiles 1977'.

Eriboea eudamippus nigra Lathy was described from one male. This holotype is now in the MNHN, Paris, and bears the following labels; 'Cataracts of Sekong R., Laos, end II. beg. III.04. (W. Micholitz) / TYPE / Type / Eulepis ♂ eudamippus nigra Lathy Spec. typicum'.

Eriboea eudamippus major Lathy was described from five males from Tongking. I have received photographs of one of these specimens from the MNHN, Paris, which bears the following labels; 'Tonkin / Eulepis eudamippus major, Lathy Spec. typicum', and is hereby designated lectotype.

Eriboea eudamippus splendens Tytler was described from an unspecified number of specimens from Htawgaw. Two males in the BMNH bear the label; '♂ Htawgaw N. Burma 7.6.27'. In addition, one male bears the labels; 'Selected as type (G. T.) / E. eudamippus splendens Tytler 1940. / Eriboea eudamippus splendens Tytler LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining male bears the additional labels; 'Paralectotype (blue) / H. C. Tytler Coll. Brit. Mus. 1941–92 / Eriboea eudamippus splendens Tytler PARALECTOTYPE det. R. L. Smiles 1979'.

Eriboea eudamippus chota Tytler was described from a series from Maymyo in which a male 'type' was indicated. In the BMNH are a male holotype and three male paratypes. The holotype bears the following labels; 'Holotype (red) / Maymyo E 3800 14.9.26 / Type selected by G. T. / E. eudamippus chota s-sp. nov. Tyt. / Eriboea eudamippus chota Tytler HOLOTYPE det R. L. Smiles 1977'. The three paratypes bear the following labels; 'Paratype (yellow) / H. C. Tytler Coll. Brit. Mus. 1941–92 / Eriboea eudamippus chota Tytler PARATYPE det. R. L. Smiles 1977'. In addition, one bears the label; 'Maymyo N. Shan States.', one the label; 'Loimwe S. Shan States 3.28', and one the label; 'Loimwe S. Shan States 4.28'.

BIONOMICS. There are records in the BMNH for all months of the year except December, at altitudes up to 1500 m.

Polyura eudamippus cupidinius (Fruhstorfer)

(Fig. 156)

Eriboea eudamippus cupidinius Fruhstorfer, 1914: 722. Holotype (sex?), CHINA: Yunnan (possibly in the Royal Scottish Museum, Edinburgh) [not examined].

Eriboea eudamippus le moulti Joicey & Talbot, 1916: 65, pl. 5, fig 1. LECTOTYPE ♂, CHINA: Tibet (BMNH), here designated [examined]. **Syn. n.**

Polyura eudamippus cupidinius (Fruhstorfer) Stichel, 1939: 581; Morishita, 1977: 12.

Polyura eudamippus lemoulti (Joicey & Talbot) Stichel, 1939: 580; Morishita, 1977: 12.

MALE, FEMALE. *Upperside.* Forewing with discal cell and base of wing brown or black, sometimes with a little diffuse pale scaling in the cell. Hindwing with submarginal black band very broad and evenly defined; less tapering than in other subspecies. Admarginals yellow, glaucous towards distal edge and very large at tornus. Base slightly brown, but no brown band between base and tornus. *Underside.* Hindwing with postdiscal chevrons normally only slightly blue-edged. Yellow admarginal at tornus large and completely interrupting silvery white submarginal ground colour to join with postdiscal yellow band.

The types of *Eriboea eudamippus lemoulti* Joicey & Talbot agree to a great extent with specimens from Yunnan, and any slight differences are likely to be due to variation.

SIZE. ♂; $\bar{x} = 48{\cdot}1$, $s = 2{\cdot}0$ (11 specimens). ♀; 1 specimen only, 50·8.

DISTRIBUTION. **China**: Tibet, [Vrianosong]; S.E. Tibet, Pemako, K'a-p'u; N. of Chungtien [Siao-Ouisi]\ Yunnan, [Pe Yen Tsin]; Yunnan, [Bahand]. 12♂, 1♀.

TYPE-MATERIAL. *Eriboea eudamippus cupidinius* Fruhstorfer, according to the original description was represented by a 'type in the Coll. Adams of the British Museum'. Much of this collection, and possibly this holotype, is now in the Royal Scottish Museum, Edinburgh, although it has yet to be found.

Eriboea eudamippus lemoulti Joicey & Talbot was described from six males from 'Vrianosong', Tibet. These specimens are now in the BMNH, and all bear the following label; 'Vrianosong Tibet'. In addition, one bears the labels; 'Lectotype (purple) / Joicey Bequest. Brit. Mus. 1934–120. / Eriboea eudamippus le Moulti Joicey & Talbot ♂ TYPE. / Eriboea eudamippus lemoulti Joicey & Talbot LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining five males bear the additional labels; 'Paralectotype (blue) /Eriboea eudamippus lemoulti Joicey & Talbot PARALECTOTYPE det. R. L. Smiles 1979'. In addition four of these bear the label; 'Joicey Bequest. Brit. Mus. 1934–120.', and one the label; 'Levick Bequest 1941–83'.

BIONOMICS. Specimens in the BMNH were captured during January and June. One specimen was taken at 900 m.

Polyura eudamippus rothschildi (Leech)

(Figs 47, 63)

Charaxes ganymedes Leech, 1891: 30. LECTOTYPE ♂, CHINA: Sichuan (BMNH), here designated [examined]. [Junior primary homonym of *Charaxes ganymedes* Staudinger, 1886.]

Charaxes rothschildi Leech, 1892: 128, pl. 14, fig. 3; Oberthür, 1912: 316, pl. 105, fig. 971. [Replacement name for *Charaxes ganymedes* Leech.]
Murwareda rothschildi (Leech) Moore, [1896]: 267.
Eulepis eudamippus (Doubleday); Rothschild & Jordan, 1898: pl. 8, figs 5, 6.
Eulepis eudamippus rothschildi (Leech) Rothschild & Jordan, 1899: 267.
Eriboea rothschildi (Leech) Stichel, 1909: 169, pl. 52c.
Eriboea eudamippus rothschildi (Leech); Fruhstorfer, 1914: 722.
Polyura eudamippus rothschildi (Leech) Stichel, 1939: 580; Morishita, 1977: 11, fig. 10.

MALE, FEMALE. Wing shape more elongate than in other subspecies. *Upperside.* Forewing with discal cell and base of wing down to the inner margin dark brown or black, and the pale yellow discal band proportionately narrower than in any other subspecies except *weismanni.* Outer margin of this band much straighter than in *P. e. formosana.* Pale yellow submarginal and postdiscal spots as large as in any subspecies and normally rounded, unlike those of *P. e. cupidinius, nigrobasalis,* or *eudamippus* which are somewhat chevron-shaped. Hindwing with admarginals yellow, glaucous towards distal edge, or sometimes mostly glaucous. Submarginal black band broad, tapering strongly towards tornus. Distal edge of disco-basal patch straight between costal margin and vein Cu_{1a} in male, less so in female. Both sexes possess a brown band which runs from the wing base to the tornus although this is less strongly marked in the female than in the male. *Underside.* Postdiscal chevrons showing only very slight blue scaling and this on the proximal black border of each chevron.

SIZE. ♂; $\bar{x} = 44{\cdot}9$, $s = 1{\cdot}5$ (40 specimens), ♀; $\bar{x} = 53{\cdot}8$, $s = 2{\cdot}3$ (12 specimens).

DISTRIBUTION. **China**: Sichuan; [Tchang-Kou]; Ichang; [Chow-pin-sa]; N. Fujian; O-mei Shan; S. of Siao Lou [Ya-Tcheou]; Pao-hsing [Moupin]; Siao Lou; K'ang-Ting [Ta-tsien-Lou]; S.W. of Siao Lou [Kiong-Tchéou]; W. of Yaan [Ta-Lou, Yuin-Kin]; [Frontiere Oriental du Thibet]. 179♂, 12 ♀.

TYPE-MATERIAL. Represented in the BMNH by a type-series of six males and one female all of which bear the label; 'Leech Coll. 1901–173.'. In addition, one male bears the labels; 'Lectotype (purple) / Omei-Shan, 3620 ft. Native coll. July & Aug. 1890. / B.M. TYPE No. Rh. 10444. / Charaxes rothschildi Leech LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining specimens all bear the labels; 'Paralectotype (blue) / Charaxes rothschildi Leech PARALECTOTYPE det. R. L. Smiles 1979'. In addition, one male bears the label; 'Omei-Shan, 3620 ft. Native coll. May & June 1890.', one female the labels; 'Omei-Shan, 3620 ft. Native coll. May & June 1890. / B.M. TYPE No. Rh. 10445.', one male the label; 'Chow-pin-sa May & June', and three males the label; 'Moupin. Kricheldorff coll. June 1890.'.

BIONOMICS. Specimens in the BMNH were taken during May and June, June, and July and August; several at an altitude of approximately 1100 m.

Polyura eudamippus kuangtungensis (Mell)

Eriboea eudamippus kuangtungensis Mell, 1923: 158. Syntypes ♂, CHINA (probably in MNHU, Berlin) [not examined].
Polyura eudamippus kuangtungensis (Mell) Stichel, 1939: 580; Morishita, 1977: 11.

MALE. *Upperside.* According to the original description, has the discal bands of both wings paler than in *P. e. rothschildi,* which it most clearly resembles, and the black stripe which runs from the base to the tornus in the hindwing is broader. The underside with the black bars on the distal edge of the postdiscal brown bands of both wings enlarged. Beyond the bar at the end of the forewing cell there are two large black spots, and distal to these are two further smaller elongate spots.

DISTRIBUTION. **China**: mountain forests to the north of Guangdong Province (Mell, 1923: 158). I have not seen any specimens.

TYPE-MATERIAL. Described from 14 males, none of which was cited as a holotype. These syntypes are probably in the MNHU, Berlin.

Polyura eudamippus whiteheadi (Crowley)

(Fig. 157)

Eulepis eudamippus whiteheadi Crowley, 1900: 506, pl. 35, fig. 1. LECTOTYPE ♂, HAINAN (BMNH), here designated [examined].

Eriboea eudamippus whiteheadi (Crowley) Fruhstorfer, 1914: 723.
Polyura eudamippus whiteheadi (Crowley) Stichel, 1939: 580; Morishita, 1977: 11.

MALE. *Upperside.* Forewing with discal cell and base of wing down to the inner margin black or dark brown. Pale discal band proportionately wider than in *P. e. weismanni, formosana* or *rothschildi.* Outer margin of this band straighter than in *P. e. formosana.* Hindwing admarginals slightly glaucous, becoming blue. Submarginal black band very narrow, forming a series of conjoined ocelli which are proximally strongly blue. Outer edge of disco-basal patch runs right up to these ocelli and is regularly curved. Brown band runs from base and peters out half way to the tornus. *Underside.* Yellow bands narrower than in any other subspecies. Forewing with outer marginal band grey-brown and very narrow. A black bar runs across cells R_5 and M_1 beyond the end of the discal cell as in *P. e. formosana,* and *weismanni.*

SIZE. ♂; 3 specimens only, 41·9, 42·2, 43·9.

DISTRIBUTION. **Hainan.** 3 ♂.

TYPE-MATERIAL. The type-series is represented in the BMNH by two males which bear the following labels; 'Hainan Whitehead / Hainan. Crowley Bequest 1901–78.'. In addition one male bears the following labels; 'Lectotype (purple) / Type / B.M. TYPE No. Rh. 10443 / Eulepis eudamippus whiteheadi Crowley LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining male bears the additional labels; 'Paralectotype (blue) / Eulepis eudamippus whiteheadi Crowley PARALECTOTYPE det. R. L. Smiles 1979'.

BIONOMICS. None of the specimens that I have seen give any information as to date of capture or altitude. Very rare (Fruhstorfer, 1914: 723).

Polyura eudamippus formosana (Rothschild)

(Figs 48, 64)

Eulepis eudamippus (Doubleday); Rothschild & Jordan, 1898: pl. 8, fig. 4.
Eulepis eudamippus formosanus Rothschild, 1899: 268. Holotype ♂, TAIWAN (BMNH) [examined].
Eriboea eudamippus formosanus (Rothschild) Fruhstorfer, 1908: 127; 1914: 722, pl. 134c.
Polyura eudamippus formosanus (Rothschild) Stichel, 1939: 581; Shirôzu, 1960: 251, pl. 59, figs 531–533, text-fig. 280; Morishita, 1977: 11, fig. 9.

MALE, FEMALE. *Upperside.* Very similar to *P. e. whiteheadi,* except submarginal spots of forewing outer margin smaller, postdiscal bands of both wings narrower, and their edges more irregular, being extended along the veins. The submarginal black band of the hindwing is wider and tapers sharply to the tornus. The admarginals are, for the most part, blue, yellow at the tornus. *Underside.* Yellow bands broader than in any other subspecies except *P. e. weismanni.* As in *P. e. whiteheadi* and *weismanni,* a black bar runs across cells R_5 and M_1 beyond the end of the discal cell of the forewing. Postdiscal chevrons of the hindwing are sometimes without any blue, but normally show a little proximally.

The female is much larger than the male, and the bands of the upperside are slightly more yellow.

SIZE. ♂; $\bar{x} = 41{\cdot}2$, $s = 2{\cdot}1$ (40 specimens), $\bar{x} = 51{\cdot}4$, $s = 1{\cdot}7$ (6 specimens).

DISTRIBUTION. **Taiwan** (Formosa): [Le-hi-ku]; [Polisha]; [Konosu, Saitana]; [Chip Chip]; Chi-chi [Kasumigaseki, Shūshū]; T'a-k'ai shan; Chia-i district [Kagi Distr.]; Kuan-tsu-ling [Kanshirei]; Pu-li [Horisha]; Chi-lung [Keelung]; [Patchima]. 44 ♂, 7 ♀.

TYPE-MATERIAL. Described from a male holotype, one male and three female paratypes all of which are now in the BMNH, and which bear the following label; 'Rothschild Bequest B.M. 1939–1.'. In addition, the holotype bears the following labels; 'Holotype (red) / Keelung, 25.vii.96 (Jonas) / Eulepis eudamippus formosanus Roths. HOLOTYPE det. R. L. Smiles 1977'. The paratypes all bear the labels; 'Paratype (yellow) / Eulepis eudamippus formosanus Roths. PARATYPE det. R. L. Smiles 1977'. In addition, one male bears the label; 'Patchima, N. Formosa vii.96, Jonas', two females the label: 'Keelung viii.97. (Jonas)', and one female the label; 'Formosa'.

BIONOMICS. Specimens in the BMNH were collected during May, June, July and August, at altitudes up to 600 m.

Polyura eudamippus weismanni (Fritze)

(Figs 6, 158)

Charaxes weismanni Fritze, 1894: 898, fig. 12. 3 Syntypes (sex?), OKINAWA (untraced) [not examined].
Eulepis eudamippus weismanni (Fritze) Rothschild & Jordan, 1899: 269.
Eriboea eudamippus weismanni (Fritze) Fruhstorfer, 1914: 723.
Polyura eudamippus weismanni (Fritze) Stichel, 1939: 581; Shirôzu & Hara, 1962: 25, 38, pl. 80, fig. 11, pl. 93, figs 142.1–7; Kubo, 1963: 17, figs 5–18; Takahashi, Tanaka & Wakahashi, 1973: 88; Morishita, 1977: 10.

MALE. *Upperside.* Forewing mostly black except for a very narrow discal band, the submarginal and postdiscal spots, a spot at the end of the discal cell, and two discal spots in cells R_5 and M_1. Hindwing with admarginals pale yellow; tails short, slightly blue-centred. Submarginal black band fairly wide and tapering strongly to the tornus. Submarginal spots large. Outer margin of disco-basal patch straight; basal band ends diffusely in cell Cu_{1b}. *Underside.* All yellow bands very broad, proportionately broader than in any other subspecies: that which runs along vein M_3 of the forewing joining the postdiscal yellow band. As in *P. e. formosana* and *whiteheadi*, a black bar runs across cells R_5 and M_1 in the forewing, beyond the end of the discal cell. Hindwing postdiscal chevrons lacking any blue.

SIZE. ♂; 1 specimen only, 40·5.

DISTRIBUTION. **N. Okinawa**: Motubu Peninsula; Nago; Haneji; Ôgimi; Kunigami; Yabu (Kubo, 1963: 15). 1 ♂.

BIONOMICS. The specimen in the BMNH was collected during August. According to Kubo (1963: 15) the adult butterflies have been taken chiefly in May, and from July to August, one specimen as early as April. The butterfly seems to be double brooded, but a small third brood may occur between September and October. They have the typical patrolling nature of the group, and both sexes are attracted to overipe and rotten fruit, especially pineapples, and tree sap (Kubo, 1963: 16).

The wasp *Telenomus kuboi* has been found parisitizing the egg (Kubo, 1963: 21).

EARLY STAGES. Eggs are usually laid singly, normally on the upper surface, but occasionally on the underside of a leaf of the foodplant. They are spherical, approximately 1·8 mm diameter, with a flat top of about 1·3 mm diameter. The height is approximately 1·6 mm. It is minutely reticulated except for the upper part which has a ribbed area of thirty-two or thirty-three ridges starting on the flat-topped surface about two-thirds of the distance from the centre, and extends a similar distance below the margin of the flat top. It is pale yellow with a transparent and very thin shell (Kubo, 1963: 18, figs 5, 6; Shirôzu & Hara, 1962: 38, pl. 93, fig 142.1).

The egg hatches in three to five days, the larva on emergence eating part of the shell. The first instar larva is 6–7 mm long and possesses four straight horns, the inner two being about 2 mm long. They together with the caudal prominences, are black, the rest of the head mask being mostly pale brown; the body after feeding is pale green. The first moult occurs after about one week, the second instar larva having yellow horns, the colour extending to form a yellow rim to the mask. There is a yellow lateral line extending into the caudal projections which are likewise yellow. The dorsal surface becomes conspicuously granular. During the second instar the larva grows from approximately 8 mm to 14 mm long. After a further week it moults again, becoming about 19 mm long, growing in approximately four days to about 24 mm long when it undergoes a third moult. The fourth instar larva grows from 26 mm to 34 mm long in about nine days. The fifth instar larva (Fig. 6) measures 38 mm in length after the fourth moult, and in the observed cases, being both autumn larvae which went on to hibernate, the duration of this stage was about one month. It seems likely that in earlier broods this stage would be much shorter. The horns are exceptionally long, and the mask is much longer than broad. The outer horns are outwardly convex and are about 8 mm long, while the inner pair are fairly straight, curving only slightly inwards. They are serrated or spined, perhaps slightly less than in the fourth instar larva. The head is pale green with darker green bands running from the mouth to the horns which are yellowish green, as is the periphery of the mask. The serrations on the horns are black-tipped. The body is green, paler ventrally, and the surface finely granulated with yellow points. There is a yellow lateral line formed by the high density of these points, and the caudal projections are

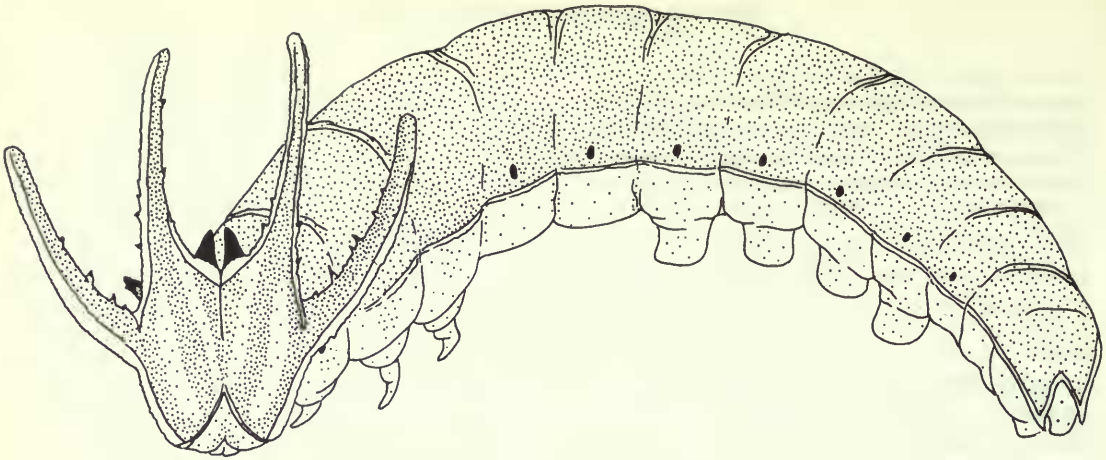


Fig. 6 Fifth instar larva of *Polyura eudamippus weismanni* (Fritze).

likewise yellow (Kubo, 1963: 18, figs 7–14; Shirôzu & Hara, 1962: 38, pl. 93, figs 142.2–5; Takahashi, Tanaka & Wakahashi, 1973: 86, 88, figs).

The larva usually pupates on a twig, never on the underside of a leaf. They may leave the foodplant to do so, especially if they are diapausing. The prepupal stage in autumn lasts about five days. The pupa is round, smooth, translucent emerald-green, sometimes with thin yellow lines, and very similar to other *Polyura* species (Kubo, 1963: 20, figs 15–18; Shirôzu & Hara, 1962: pl. 93, figs 142.6, 7).

According to Kubo (1963: 21) the butterfly overwinters as a pupa, but the possibility cannot be discounted that the larva may, in some cases overwinter, as Okinawa is free from frost.

Recorded foodplants are: *Rhamnella franguloides* (Rhamnaceae), *Celtis boninensis* (Ulmaceae) (Kubo, 1963: 17, figs 3, 4).

Polyura eudamippus peninsularis (Pendlebury)

(Fig. 159)

Eriboea eudamippus peninsularis Pendlebury, 1933: 398; Corbet & Pendlebury, 1934: 178, pl. 12, fig. 157. Holotype ♂, West Malaysia: Pahang (BMNH) [examined].

Polyura eudamippus peninsularis (Pendlebury) Stichel, 1939: 580; Corbet & Pendlebury, 1956: 245; Fleming, 1975: 54; Morishita, 1977: 13; Corbet & Pendlebury, 1978: 213.

Male. *Upperside.* Forewing very similar to *P. e. eudamippus*, but with all or most of the discal cell and the wing base black or dark brown. Submarginal and postdiscal spots smaller than in that subspecies. Hindwing with admarginals completely yellow. Submarginal black band as in *P. e. eudamippus*. Base of wing slightly brown. *Underside.* Similar to *P. e. eudamippus*, but with yellow bands slightly narrower and browner. Forewing with DII much smaller, sometimes reduced to only one small black spot. Postdiscal chevrons of hindwing with a little peripheral blue.

Size. ♂; 5 specimens only, 44·9, 43·4, 42·6, 44·2, 44·6.

Distribution. **West Malaysia**: Pahang, Cameron Highlands; Pahang, Lubok Temang; South Perak, Gunong Jasar; Perak, Batang Padang, [Jor Camp]. 5 ♂.

Type-material. Described from a male holotype and five male paratypes. The holotype and one paratype are in the BMNH, the former bearing the labels; 'Holotype (red) / PAHANG. F. M. S. Lubok Tamang 3500 ft. March 7th 1924 H. M. Pendlebury. / Brit. Mus. 1934–80. / Eriboea eudamippus peninsularis Pendlebury HOLOTYPE det. R. L. Smiles 1977'. The paratype bears the labels; 'Paratype (yellow) / Perak. F. M. S. Batang Padang Jor Camp. Feb. 25th 1915 / Ex F. M. S. Museum B.M. 1955–354. / Eriboea eudamippus peninsularis Pendlebury PARATYPE det. R. L. Smiles 1977'.

BIONOMICS. Specimens in the BMNH were collected during February, March, September and December. Two specimens with altitude data were caught at 1100 and 1700 m respectively.

Polyura nepenthes (Grose-Smith)

(Figs 51, 67, 142, 143)

Charaxes nepenthes Grose-Smith, 1883: 58.
Eriboea nepenthes (Grose-Smith) Fruhstorfer, 1914: 723.
Polyura nepenthes (Grose-Smith) Stichel, 1939: 582; Boonsong, Askins, Nabhitabhata & Samruadkit, 1977: 138, fig. 339.

MALE, FEMALE. *Upperside.* Predominantly pale yellow. Apex of forewing black. As in *P. eudamippus*, a submarginal series of spots, and a postdiscal series of somewhat chevron-shaped spots present. Two discal spots present in cells M_1 and R_5 respectively. Hindwing with admarginals pale yellow, only slightly darker than the disco-basal patch which covers most of the rest of the wing, and is produced along the veins to join the admarginals. The tails are blue-centred. A series of black submarginal ocelli are present, encompassing very large pale yellow pupils. *Underside.* Ground colour silvery white. Forewing with a greenish yellow band running along the outer margin, but not so strongly marked as in *P. posidonius*, *narcaea*, *eudamippus* or *dolon*. A yellow or blue band runs from the end of the discal cell towards the inner margin, ending at vein Cu_{1b} or in cell Cu_{1b}. This is bordered by MI, MII and DI, but these are much thicker and more interrupted than in *P. dolon*, and unlike *P. posidonius*, *narcaea* or *eudamippus*, there is no similar band running along vein M_3. There is no costal band. A further yellow band runs from the costal margin to end around vein 2A, but is interrupted at the veins. The distal edge of this band is outlined by a complete series of black chevrons, and distal to these are more black chevrons extending upwards from cell Cu_{1b}, but not beyond cell R_5. MI is present in cells R_5 and M_1 as two black spots, and DII is likewise present as two black spots in the discal cell. Hindwing outer margin black, dentate; admarginals yellow, tails blue-centred. There is a complete series of black submarginal spots which are somewhat suppressed at the tornus. As is the case in *P. eudamippus* and *dolon*, the postdiscal chevrons are black-outlined, and lie on the distal edge of a yellow postdiscal band. In most specimens these chevrons are blue proximally, otherwise the colour of the accompanying band shows through. A yellow band runs from the costal margin near the wing base and curves to end near the tornus. The anterior portion is somewhat sporadically delineated by MI and MII, which may show blue scaling on the edge nearest to this band.

Abdomen in male off-white, sometimes brown above and beneath, female grey-brown above, brown or black beneath.

RANGE. In Thailand, Burma, Laos, Vietnam, western and south-western China, Hainan, and eastern China.

Polyura nepenthes nepenthes (Grose-Smith)

(Figs 51, 67, 143)

Charaxes nepenthes Grose-Smith, 1883: 58; Grose-Smith & Kirby, 1887: [4], pl. 2, figs 3, 4. LECTOTYPE ♂, THAILAND (BMNH), here designated [examined].
Murwareda nepenthes (Grose-Smith) Moore, [1896]: 267.
Eulepis nepenthes (Grose-Smith) Rothschild & Jordan, 1898: pl. 9, fig. 3; 1899: 269; Joicey & Talbot, 1928: 17.
Eriboea nepenthes nepenthes (Grose-Smith) Fruhstorfer, 1914: 723.
Eriboea nepenthes fugator Fruhstorfer, 1914: 723. LECTOTYPE ♂, VIETNAM (BMNH), here designated [examined]. **Syn. n.**
Eriboea nepenthes (Grose-Smith); Evans, 1924: 896; 1927: 94.
Polyura nepenthes [*nepenthes*] (Grose-Smith) Stichel, 1939: 582.
Polyura nepenthes fugator (Fruhstorfer) Stichel, 1939: 582.
Polyura nepenthes (Grose-Smith); Morishita, 1977: 5, fig. 2.
Polyura nepenthes nepenthes (Grose-Smith); Pinratana, 1979: 101, fig. N172.

MALE, FEMALE. *Upperside.* Forewing with pale spots fairly large, normally larger than in *P. n. kiangsiensis.* Pale markings beyond disco-basal patch in cell Cu_{1b} joined to the pale chevron in cell Cu_{1a} and partially to the disco-basal patch. *Underside.* Hindwing with postdiscal chevrons normally deeper than in *P. n. kiangsiensis.*

Eriboea nepenthes fugator Fruhstorfer falls within the range of variation exhibited by a long series of the nominate subspecies, and is treated here as a synonym.

SIZE. ♂; $\bar{x} = 45{\cdot}0$, $s = 1{\cdot}7$ (31 specimens). ♀; 2 specimens only, 53·7, 53·7.

DISTRIBUTION. **Laos**: Vang Vieng (Morishita, 1977: 5). **Thailand** [Siam]. **Burma**: Salween District, Papun to [Mai-hong-song]; Shan State, Salween River; N. Shan State, Kunglom [Kunlon]. **Vietnam**: Tong; [Ko-Tich]; Cha Pa; [Riviere Noire]; [Mont Bavi]; Chiem Hoa; Van Bu. **China**: Sichuan; Canton; Fujian Province; S. China, Fu-ning [Fu-chow]. **Hainan**: Tan-hsien [Nodoa]. 31 ♂, 3 ♀.

TYPE-MATERIAL. *Charaxes nepenthes* Grose-Smith is represented in the BMNH by three males, all of which bear the labels; 'Siam / Ex. Grose-Smith, 1910.'. One male bears the additional labels; 'Lectotype (purple) / Type / Joicey Bequest. Brit. Mus. 1934–120. / Charaxes nepenthes Grose-Smith LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining two males bear the additional labels; 'Paralectotype (blue) / Co. Type. / Levick Bequest 1941–83. / Charaxes nepenthes Grose-Smith PARALECTOTYPE det. R. L. Smiles 1979'.

Eriboea nepenthes fugator Fruhstorfer was described from an unspecified number of specimens, and is represented in the BMNH by a single male which bears the labels; 'Lectotype (purple) / Type / Indochina H. Fruhstorfer / Fruhstorfer Coll. B.M. 1937–285. / Eriboea nepenthes fugator Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype.

BIONOMICS. Specimens in the BMNH have been collected during March, June, July, August, September and October. One specimen was collected at an altitude of approximately 600 m.

Polyura nepenthes kiangsiensis (Rousseau-Decelle)

(Fig. 142)

Eriboea nepenthes kiangsiensis Rousseau-Decelle, 1938: 166, pl. 1, figs 1, 2. Holotype ♂, CHINA: Kiangsi (untraced) [not examined].

MALE, FEMALE. *Upperside.* Forewing with pale spots normally smaller than in the nominate subspecies. Submarginal spots and proximal chevrons in cell Cu_{1b} not joined to chevron in cell Cu_{1a}, and only joined to the disco-basal patch along vein 2A. *Underside.* Hindwing postdiscal chevrons normally narrower than in *P. n. nepenthes.*

SIZE. ♂; 2 specimens only, 41·5, 46·0.

DISTRIBUTION. **E. China**: Kiangsi, [Long-Tchéou] (Rousseau-Decelle, 1938: 167); S. Zhejiang, Pihu; S. Zhejiang Province, Ta-k'eng-tsun [Takeng Tou]. 2 ♂.

TYPE-MATERIAL. Described from a male holotype from Kiangsi, and a female paratype from 'Long-Tchéou' which were part of Rousseau-Decelle's personal collection. Unfortunately, this collection was auctioned (C. Lemaire, pers. comm.) and I have been unable to trace the whereabouts of the types.

BIONOMICS. The specimens in the BMNH were collected during April and May, one at an altitude of approximately 350 m.

Polyura dolon (Westwood)

(Figs 52, 68, 144–148)

Charaxes dolon Westwood, 1848: 55, pl. 27, figs 2, 3; de Nicéville, 1886: 272.
Nymphalis dolon (Westwood) Westwood, [1850]: 309.
Murwarda (sic) *dolon* (Westwood) Moore, [1896]: 263, pl. 187, figs 1, 1a.
Eulepis dolon (Westwood) Rothschild & Jordan, 1899: 271; Bingham, 1905: 226; Antram, 1924: 129, fig. 263.
Eriboea dolon (Westwood) Stichel, 1909: 170, pl. 61a; Fruhstorfer, 1914: 723; Wynter-Blyth, 1957: 149, pl. 21, fig. 1.
Polyura dolon (Westwood) Stichel, 1939: 582; Lewis, 1974: 288, pl. 197, fig. 9; Duckworth, Watson & Whalley, 1975: 267, fig. 236h; Boonsong, Askins, Nabhitabhata & Samruadkit, 1977: 140, pl. 68, fig. 340.

Similar to *P. nepenthes.*

MALE, FEMALE. *Upperside.* Disco-basal patches of both wings and postdiscal spots of forewing pale greenish yellow. Forewing with black apex containing a single row of postdiscal spots running from cell R_5 to cell Cu_{1b}, the last often suppressed. Costal edge brown, a black bar running from this across the end of the discal cell. Hindwing with admarginals yellow, often blue or glaucous distally; tails blue-centred. A black submarginal band often appearing as a row of conjoined ocelli containing a series of purple submarginal spots, and proximal to these a series of yellow semicircles which sometimes join up with the admarginals. The remainder of the hindwing is covered by the disco-basal patch. *Underside.* Apex of forewing and submarginal band of hindwing corresponding to black areas of upperside, silvery white, disco-basal patches pale green. As in *P. posidonius*, *narcaea*, *eudamippus* and *nepenthes*, forewing with a band which runs along the outer margin, and a postdiscal band which runs from the costal margin to the inner margin near the tornus; these are yellowish brown, the latter being delineated distally by arcuate black lines in each cell. As in *P. nepenthes* a yellowish brown band runs from the end of the discal cell towards the inner margin, ending at vein Cu_{1b} or in cell Cu_{1b}. This is similarly bordered by MI, MII and DI, but these black lines are narrower and less interrupted than in *P. nepenthes.* As in *P. narcaea* and *eudamippus* there is a brown costal band. DII is represented by a single black spot which lies alongside the costal band in the discal cell. Hindwing admarginals brown or yellow, tails blue-centred. Proximally there lies a complete row of submarginal black spots somewhat suppressed at the tornus, which are surmounted in each cell by a postdiscal chevron. The postdiscal chevrons are black-outlined, as they are in *P. eudamippus* and *nepenthes*, and lie on the distal edge of a yellow postdiscal band. They are often slightly blue proximally. A further yellow band runs from the costal margin near the wing base and curves to end near the tornus. The outer edge is delineated by MI, and the inner edge down to just beyond the discal cell by MII. These lines are much narrower and less disrupted than in *P. nepenthes.*

Abdomen of both sexes brown or black above and beneath.

RANGE. In the Himalayas in northern India, Sikkim, West Bengal, Assam, Nagaland and Manipur, through Burma and Thailand to western China.

Polyura dolon dolon (Westwood)

(Figs 52, 68, 144)

Charaxes dolon Westwood, 1848: 55, pl. 27, figs 2, 3. Syntype? ♂, INDIA: Almora (described from Malwa) (BMNH) [examined].
Eulepis dolon dolon (Westwood) Rothschild & Jordan, 1899: 273.
Eriboea dolon dolon (Westwood); Fruhstorfer, 1914: 723.
Eriboea dolon (Westwood): Wynter-Blyth, 1957: 149 [in part].
Polyura dolon [*dolon*] (Westwood) Stichel, 1939: 582.

MALE, FEMALE. *Upperside.* Forewing with postdiscal spots normally slightly larger than in *P. d. centralis.* Hindwing with submarginal blue or purple spots rather smaller than in any other subspecies. Individual specimens of *P. d. carolus* from China may have these spots as small or smaller as this character is very variable in that subspecies. Admarginals mostly yellow as in *P. d. centralis*, other subspecies all having more distal blue or glaucous coloration. *Underside.* Hindwing tails with only a trace of blue, less blue-centred than in any other subspecies.

SIZE. ♂; $\bar{x} = 42{\cdot}7$, $s = 1{\cdot}3$ (40 specimens). ♀; 1 specimen only, 52·8.

DISTRIBUTION. **N. India**: Kashmir; Sultanpur, Kulu; Tehri Garwhal, near Mussoorie; Mussoorie, [Aglar Valley]; Naini Tal; Kumaun, Almora; [Sundaryal]. **Nepal**: [Nepal Valley]; [Godaveri]; Katmandu. 42 ♂, 1 ♀.

TYPE-MATERIAL. *Charaxes dolon* Westwood was described from an unspecified number of specimens from 'Malwah' in the collection of Captain Boys. One male specimen in the BMNH may perhaps be a syntype, and has been labelled as a 'type' at sometime in the past. However, it is also labelled as coming from Almora and appears to have been repinned and perhaps reset, which would explain the discrepancy between the size of this specimen and the reported wingspan of the original description (3·5 ins). It was purchased by the BMNH in 1848 as part of the Boys collection. Apart from this specimen, I have not been able to trace any other possible members of the type-series.

Eulepis dolon centralis Rothschild. Of the 12 male paratypes traced in the BMNH, four males must be included in the present subspecies. All these bear the labels; 'Paratype (yellow) / Eulepis

dolon centralis Roths. PARATYPE det. R. L. Smiles 1977'. In addition, two bear the label; '69.41 Nepal.', and two the labels; 'Nepal. / Moore Coll. 98–128.'.

BIONOMICS. Specimens in the BMNH have been taken during May at altitudes up to 4900 m. Very rare (Rothschild & Jordan, 1899: 271). According to Wynter-Blyth (1957: 150) 'All along the Himalayas there is a brood that appears early in May, but east of Simla there is an autumn brood as well.'

Polyura dolon centralis (Rothschild)

(Fig. 145)

Nyphalis dolon (Westwood); Horsfield & Moore, 1858: 206.
Charaxes dolon Westwood; Elwes, 1888: 367.
Eulepis dolon (Westwood) Rothschild & Jordan, 1898: pl. 9, fig. 1.
Eulepis dolon centralis Rothschild, 1899: 274. Holotype ♂, INDIA: Sikkim (BMNH) [examined].
Eriboea dolon centralis (Rothschild) Stichel, 1909: 170; Fruhstorfer, 1914: 723.
Polyura dolon centralis (Rothschild) Stichel, 1939: 583.
Eriboea dolon (Westwood); Wynter-Blyth, 1957: 150 [in part].

MALE. *Upperside.* Forewing with postdiscal spots normally smaller than in *P. d. dolon.* Hindwing with submarginal purple spots larger than in that subspecies. Admarginals as in *P. d. dolon. Underside.* Hindwing with tails more blue-centred, and tail associated with vein M_3 often longer than in the nominate subspecies.

This may form one end of a cline running along the Himalayas, there being a gap in the distribution of the specimens which I have studied. It seems to me that specimens from Nepal, here included under *P. d. dolon*, approach specimens of *P. d. centralis.*

SIZE. ♂; $\bar{x} = 43{\cdot}4$, $s = 1{\cdot}4$ (40 specimens).

DISTRIBUTION. **NE. India**: Sikkim, Chunthang (Wynter-Blyth, 1957: 150); Sikkim, Lachen Lachung; Sikkim, [nr Trivi]; Darjeeling, [Gopaldhara]; [Runjit Valley]. 81 ♂.

TYPE-MATERIAL. Described from 27 males and one female, of which the male holotype and twelve male paratypes have been found in the BMNH. Of these, four paratypes have already been dealt with here as *P. d. dolon* (see above), and one paratype as *P. d. magniplaga* (see below). All the remaining types bear the following label; 'Rothschild Bequest B.M. 1939–1.'. In addition, the holotype bears the following labels: 'Holotype (red) / SIKKIM 26.4.1888 O. MØLLER / Eulepis dolon centralis Roths. HOLOTYPE det. R. L. Smiles 1977'. The seven paratypes bear the labels; 'Paratype (yellow) / Eulepis dolon centralis Roths. PARATYPE det. R. L. Smiles 1977'. In addition four paratypes bear the label; 'SIKKIM 20.4.1888 O. MØLLER', two the label; 'SIKKIM 2.5.1886 O. MØLLER', and one the label; 'SIKKIM 1.5.1886 O. MØLLER'.

BIONOMICS. Specimens in the BMNH were captured during March, April, May and June, at altitudes between 1000 and 4800 m. According to Fruhstorfer (1914: 273) 'It flies in April and May in the hot valleys occurring in but one generation.'

Polyura dolon magniplaga (Fruhstorfer)

(Fig. 146)

Eulepis dolon magniplagus Fruhstorfer, 1904 *c*: 381. LECTOTYPE ♂, INDIA: Assam (BMNH), here designated [examined].
Eriboea dolon magniplagus (Fruhstorfer) Fruhstorfer, 1914: 723, pl. 134c.
Polyura dolon magniplagus (Fruhstorfer) Stichel, 1939: 584.

MALE, FEMALE. *Upperside.* Forewing postdiscal spots larger than in *P. d. centralis*, often suppressed in cells Cu_{1b}. Hindwing with submarginal purple spots similar to *P. d. centralis.* Admarginals more blue distally and at the veins than in *P. d. dolon* or *centralis*, similar to *P. d. grandis*, and less blue than *P. d. carolus.* Tails mostly blue. *Underside.* Hindwing with tails much more blue-centred than in *P. d. dolon* or *centralis.*

SIZE. ♂; $\bar{x} = 45{\cdot}8$, $s = 1{\cdot}8$ (40 specimens), ♀; 5 specimens only, 52·2, 53·0, 54·7, 56·0, 58·5.

DISTRIBUTION. **NE. India**: Khasi Hills, Cherrapunji; Assam, Jaintia Hills; Shillong; Garo Hills; Naga Hills, [Kirbari]; Naga Hills, [Phesima]; W. Manipur Valley; Manipur, [Kahu]; Manipur, [Kanjuphul]; Manipur, Saitu. 46 ♂, 5 ♀.

TYPE-MATERIAL. *Eriboea dolon magniplagus* Fruhstorfer is represented in the BMNH by four males and one female bearing the label; 'Assam Khasia Hills ex coll. H. Fruhstorfer'. In addition, one male bears the following labels; 'Lectotype (purple) / Fruhstorfer coll. B.M. 1937–285. / Type / Eulepis dolon magniplagus Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining specimens all bear the following labels; 'Paralectotype (blue) / Eulepis dolon magniplagus Fruhstorfer PARALECTOTYPE det. R. L. Smiles 1979'. In addition, three males bear the label; 'Fruhstorfer Coll. B.M. 1937–285.', and one of these the label; 'Type'. The remaining female bears the additional label; 'Rothschild Bequest B.M. 1939–1.'.

Eulepis dolon centralis Rothschild. Of the twelve male paratypes traced in the BMNH, one male must be included in the present subspecies. This bears the labels: 'Paratype (yellow) / KHASI HILLS May 1889 W. A. HAMILTON / Rothschild Bequest B.M. 1939–1. / Eulepis dolon centralis Roths. PARATYPE det. R. L. Smiles 1979'.

BIONOMICS. Specimens in the BMNH have been captured during March, April, May, June, August and September at altitudes between 1600 and 2500 m.

Polyura dolon grandis (Rothschild)

(Fig. 147)

Eulepis dolon (Westwood) Rothschild & Jordan, 1898: pl. 9, fig. 2.
Eulepis dolon grandis Rothschild, 1899: 275. LECTOTYPE ♂, BURMA: Shan State (BMNH), here designated [examined].
Eriboea dolon grandis (Rothschild) Fruhstorfer, 1914: 723.
Polyura dolon grandis (Rothschild) Stichel, 1939: 584; Pinratana, 1979: 101, fig. N172.

MALE, *Upperside*. Forewing postdiscal spots variable in size, but generally small, those of cell Cu_{1b} suppressed. Hindwing submarginal purple spots larger than in any other subspecies, occasionally centred with white. Admarginals very much like those of *P. d. magniplaga*, tails completely blue. *Underside*. Hindwing tails more blue than in any other subspecies.

SIZE. ♂; $\bar{x} = 53{\cdot}1$, $s = 1{\cdot}3$ (31 specimens).

DISTRIBUTION. **Burma**: Kalaw; S. Shan State, Möng La; S. Shan State, Loimwe; Thandaung; Karen Hills; Tenasserim. **Thailand** (Siam): Upper Mae Nam River (Up. Menam R.); Bangkok. **Laos**: nr Luang-Prabang (Fruhstorfer, 1914: 723). 32 ♂.

TYPE-MATERIAL. Described from four males in the Tring Museum, none of which was selected as a holotype. These specimens are now in the BMNH and bear the following labels; 'Shan States / Rothschild Bequest B.M. 1939–1.'. In addition, one male bears the following labels; 'Lectotype (purple) / N. Z. 98 T.ix. f. 2 / Eulepis dolon grandis Rothschild LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype. The remaining three males bear the additional labels; 'Paralectotype (blue) / Eulepis dolon grandis Rothschild PARALECTOTYPE det. R. L. Smiles 1979'.

BIONOMICS. Specimens in the BMNH were collected during April and May at altitudes between 900 and 1400 m.

Polyura dolon carolus (Fruhstorfer)

(Fig. 148)

Eulepis dolon carolus Fruhstorfer, 1904*c*: 381. LECTOTYPE ♂, CHINA (BMNH), here designated [examined].
Charaxes dolon sinica Oberthür, 1912: 315, pl. 105, fig. 970. LECTOTYPE ♀, CHINA ('Frontière orientale du Thibet') (BMNH), here designated [examined]. [Synonymized by Stichel, 1939: 585.]

Eriboea dolon carolus (Fruhstorfer) Fruhstorfer, 1914: 723; Bollow, 1930: 195.
Eriboea dolon carolus ab. *niger* Lathy, 1926: 97, pl. 3, fig. 4; Bollow, 1930: 195. Holotype ♂, CHINA (MNHN, Paris) [colour transparencies of upper and underside examined].
Polyura dolon carolus (Fruhstorfer) Stichel, 1939: 585.
Polyura dolon carolus f. *niger* (Lathy) Stichel, 1939: 585.

MALE, FEMALE. *Upperside.* Pale areas less yellow than in other subspecies. Forewing postdiscal spots large, generally obliterated or suppressed in cell Cu_{1b}. Hindwing submarginal purple spots smaller than in *P. d. grandis*, occasionally very small. Admarginals yellow overlayed with blue everywhere except at the tornus, sometimes almost completely blue. Tails largely blue, but with a broader black margin than *P. d. grandis*. Occasionally the base of the forewing is brown encompassing all of the discal cell and an area from the end of the discal cell to the inner margin. There may also be a brown basal band on the hindwing, running from the wing base and becoming more diffuse as it extends to the tornus (*nigra* Lathy). *Underside.* Hindwing tails blue-centred, but less so than in *P. d. grandis*.

SIZE. ♂; $\bar{x} = 46{\cdot}9$, $s = 3{\cdot}4$ (40 specimens), ♀; 1 specimen only, 56·3.

DISTRIBUTION. **NE. India**: Lohit Valley; Abor, [Shemo R.]. **NE. Burma**: Htawgaw; Sadon. **China**: ['Frontière orientale du Thibet']; Tibet, [Fou-Lin]; Tibet, Ta-Ho; [Tay-Tou-Ho]; S.E. Tibet, La-lung, [Pachakshiri]; S.E. Tibet, Ch'a-yü ho [Zayul], A-te-ko shan-k'ou [Atakang]; Yunnan, [Bahand]; Yunnan, [Pe Yen Tsing]; Yunnan, Tali; Yunnan, [Tsetchong]; Yunnan, K'un-ming [Yunnanfou]; N. of Chungtien [Siao Ouisi]; [Lou-tse-Kiang]; Tsekou; W. of Yaan [Tien Tsuen]; Siao-Lou, [Tchang-Chau-Pin]; K'ang-Ting [Ta-tsien-lou]; Pao-hsing [Mou-Pin]. 298 ♂, 1 ♀.

TYPE-MATERIAL. *Eulepis dolon carolus* Fruhstorfer is represented in the BMNH by one male which bears the following labels; 'Lectotype (purple) / Siao-Lou Chasseurs indigènes du P. Déjean 1901 / Type / Fruhstorfer Coll. B.M. 1937–285. / Eulepis dolon carolus Fruhstorfer LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype.

Charaxes dolon sinica Oberthür was described from an unspecified number of female specimens, although probably there was only one. One female in the BMNH bears the following labels; 'Lectotype (purple) / Frontière orientale du Thibet Chasseurs indigènes du P. Déjean 1905 / Levick Bequest 1941–83 / Charaxes dolon sinica Oberthür LECTOTYPE det. R. L. Smiles 1979', and is hereby designated lectotype.

Eriboea dolon carolus ab. *niger* Lathy was described from a single male in the MNHN, Paris. This holotype bears the following labels; 'TYPE / Ta Tsien Loũ Thibet 1903 T. Térisse MUSEUM DE PARIS / Eulepis dolon carolus ab. niger Lathy Spec. typicum. / Eriboea dolon carolus ab. niger Lathy Lepidoptera. 1, 1926, p. 97, pl. 3'.

BIONOMICS. Specimens in the BMNH were collected during May, June and August at altitudes between 1300 and 2500 m.

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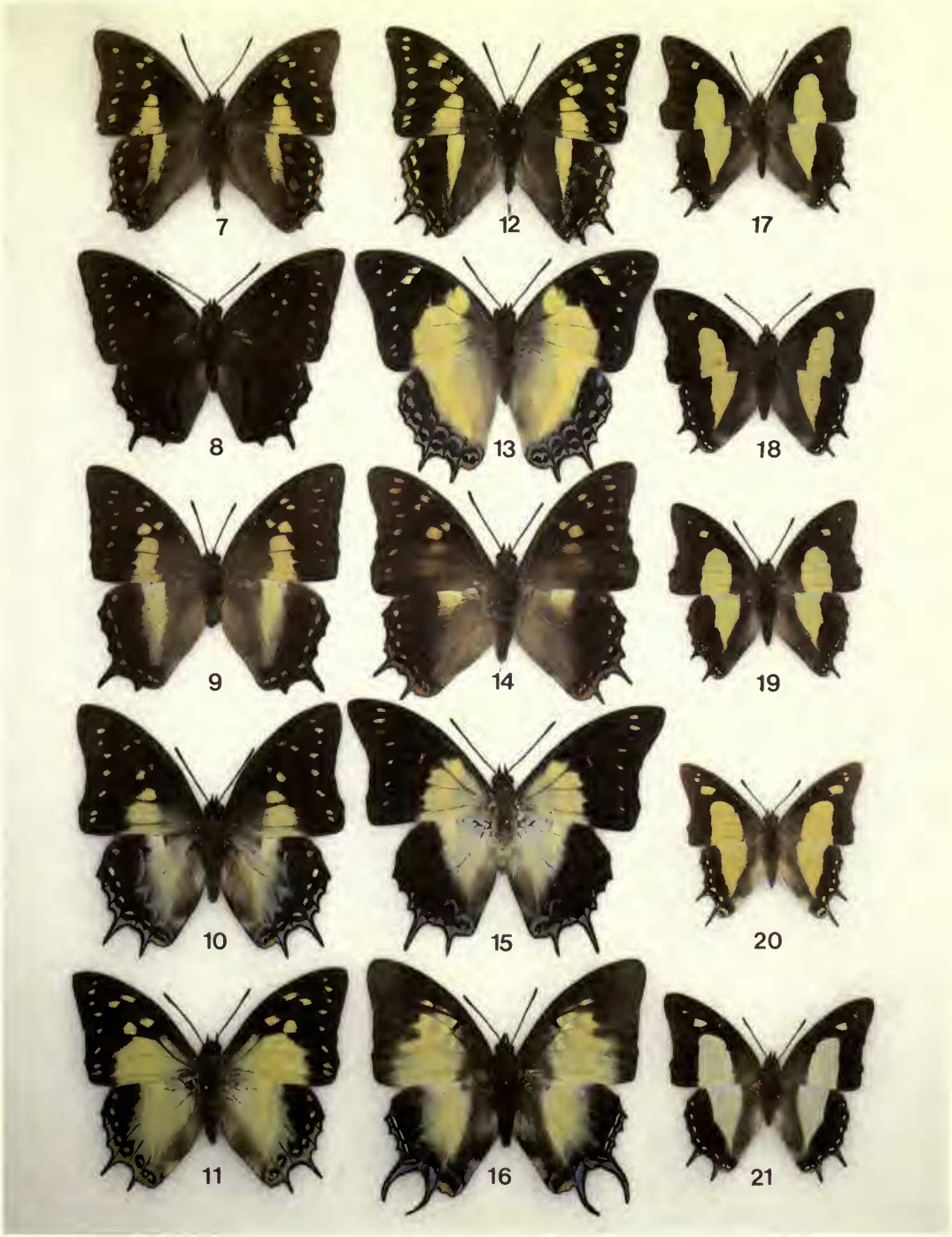
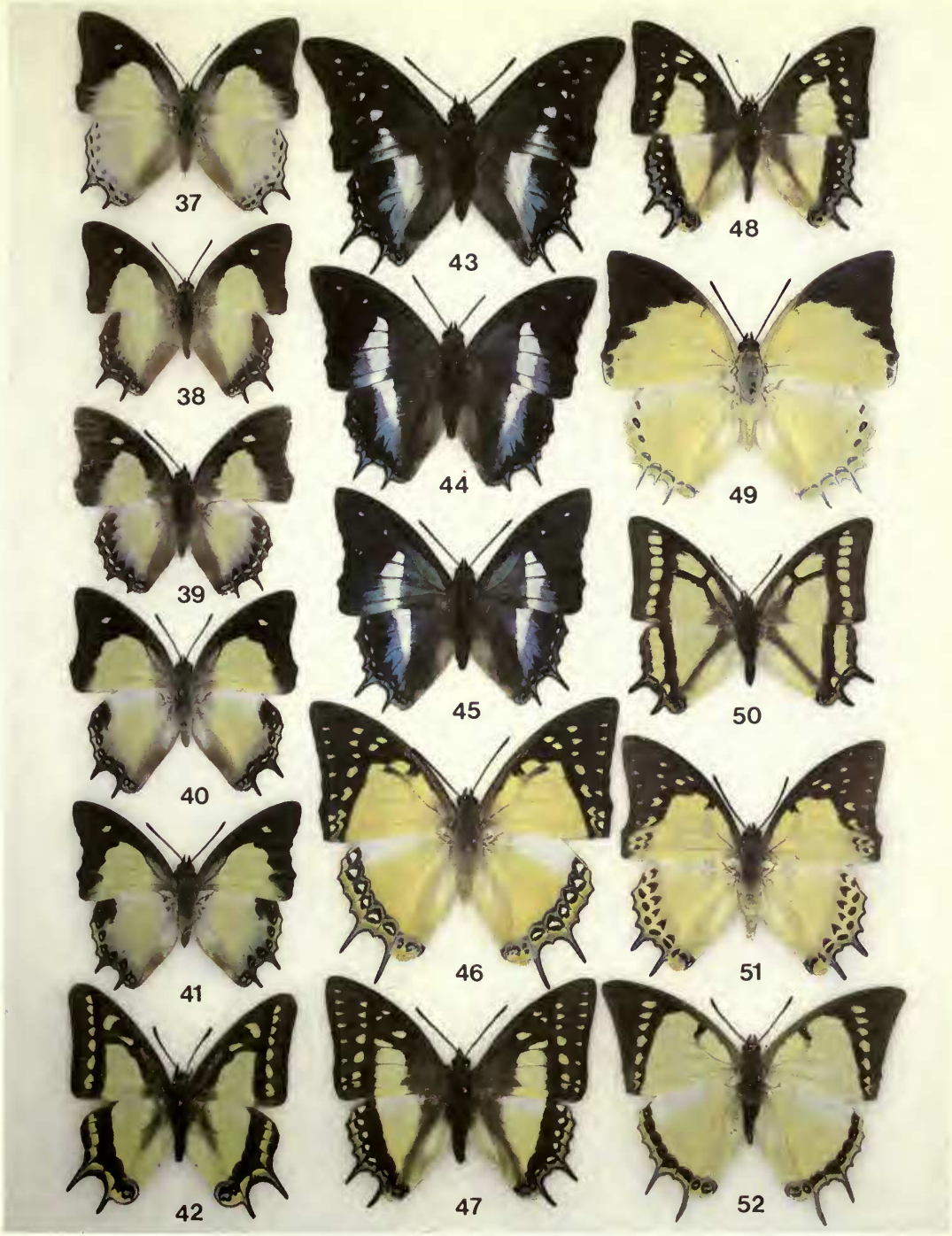
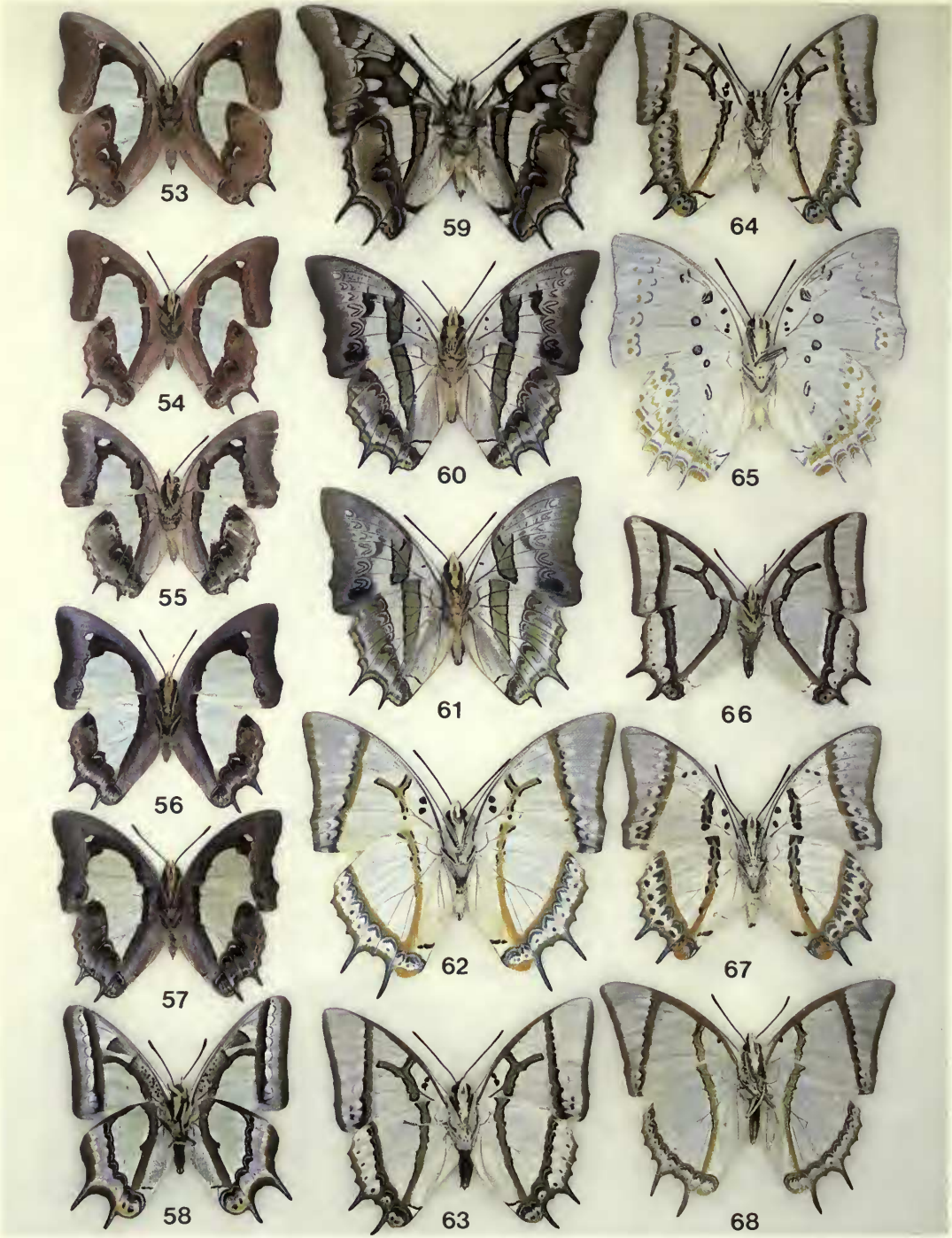


Figs 7–21 *Polyura* species, uppersides. 7, *P. caphontis nambavatua* subsp. n., ♂ holotype (Fiji, Vanua Mbalavu I., Nambavatu). 8, 9, *P. epigenes epigenes* (Godman & Salvin). (8) ♂ lectotype (Guadalcanal, Aola); (9) ♀ (Guadalcanal, Honiara). 10, *P. pyrrhus pyrrhus* (Linnaeus), ♂ (Seram, [Bomfia]). 11, *P. gilolensis gilolensis* (Butler), ♂ (Batjan). 12, *P. sacco* Smart, ♂ (Vanuatu, Tanna I.). 13, *P. clitarchus* (Hewitson), ♂ (Loyalty Is., Mare). 14, *P. andrewsi* (Butler), ♂ lectotype (Christmas I., Flying Fish Cove). 15, *P. galaxia seitzi* (Rothschild), ♂ (Tanimbar Is.). 16, *P. dehanii denahii* (Westwood) ♂ (Java, Sukabumi). 17–19, *P. athamas* (Drury). (17) *athamas* [f. *athamas*] (Drury) ♂ (Sri Lanka, Kandy); (18) *kannegieteri* (Lathy), ♂ lectotype (Nias, [Kalim Bungo]); (19) *acuta* (Rothschild), ♂ holotype (Mindanao). 20, *P. agraria agraria* (Swinhoe), ♂ (India, Tiruchirappalli). 21, *P. arja* (Felder & Felder), ♂ (Burma, Kawkareik, [Thingannyi]).

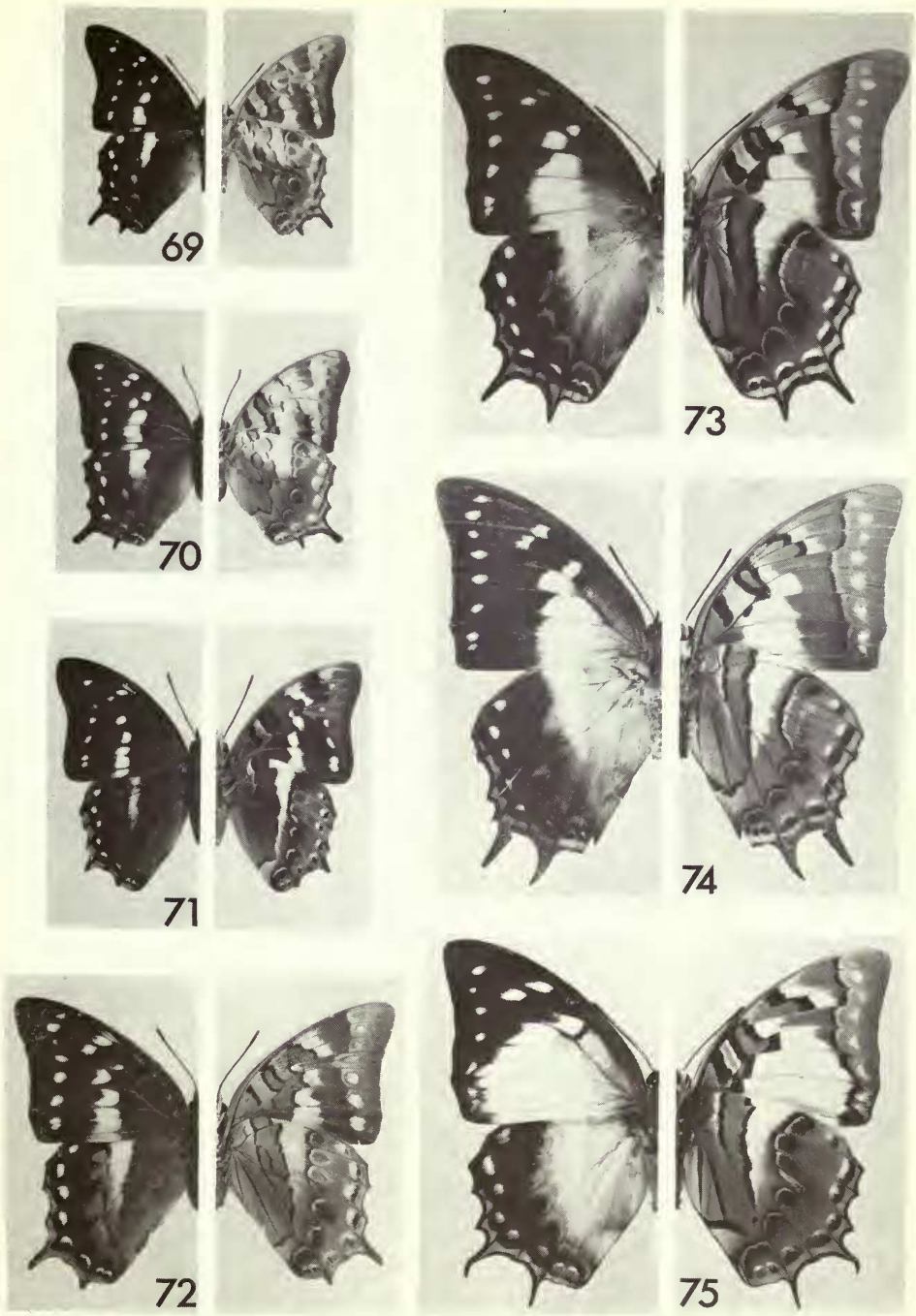
Figs 22–36 *Polyura* species, undersides. 22, *P. caphontis nambavatua* subsp. n. ♂ holotype (Fiji, Vanua Mbalavu I., Nambavatu). 23, 24, *P. epigenes epigenes* (Godman & Salvin). (23) ♂ lectotype (Guadalcanal, Aola); (24) ♀ (Guadalcanal, Honiara). 25, *P. pyrrhus pyrrhus* (Linnaeus), ♂ (Seram, [Bomfia]). 26, *P. gilolensis gilolensis* (Butler), ♂ (Batjan). 27, *P. sacco* Smart, ♂ (Vanuatu, Tanna I.). 28, *P. clitarchus* (Hewitson), ♂ (Loyalty Is., Mare). 29, *P. andrewsi* (Butler), ♂ lectotype (Christmas I., Flying Fish Cove). 30, *P. galaxia seitzi* (Rothschild), ♂ (Tanimbar Is.). 31, *P. dehanii dehanii* (Westwood), ♂ (Java, Sukabumi). 32–34, *P. athamas* (Drury). (32) *athamas* [f. *athamas*] (Drury), ♂ (Sri Lanka, Kandy); (33) *kannegieteri* (Lathy), ♂ lectotype (Nias, [Kalim Bungo]); (34) *acuta* (Rothschild), ♂ holotype (Mindanao). 35, *P. agraria agraria* (Swinhoe), ♂ (India, Tiruchirappalli). 36, *P. arja* (Felder & Felder) ♂ (Burma, Kawkareik, [Thingannyi]).



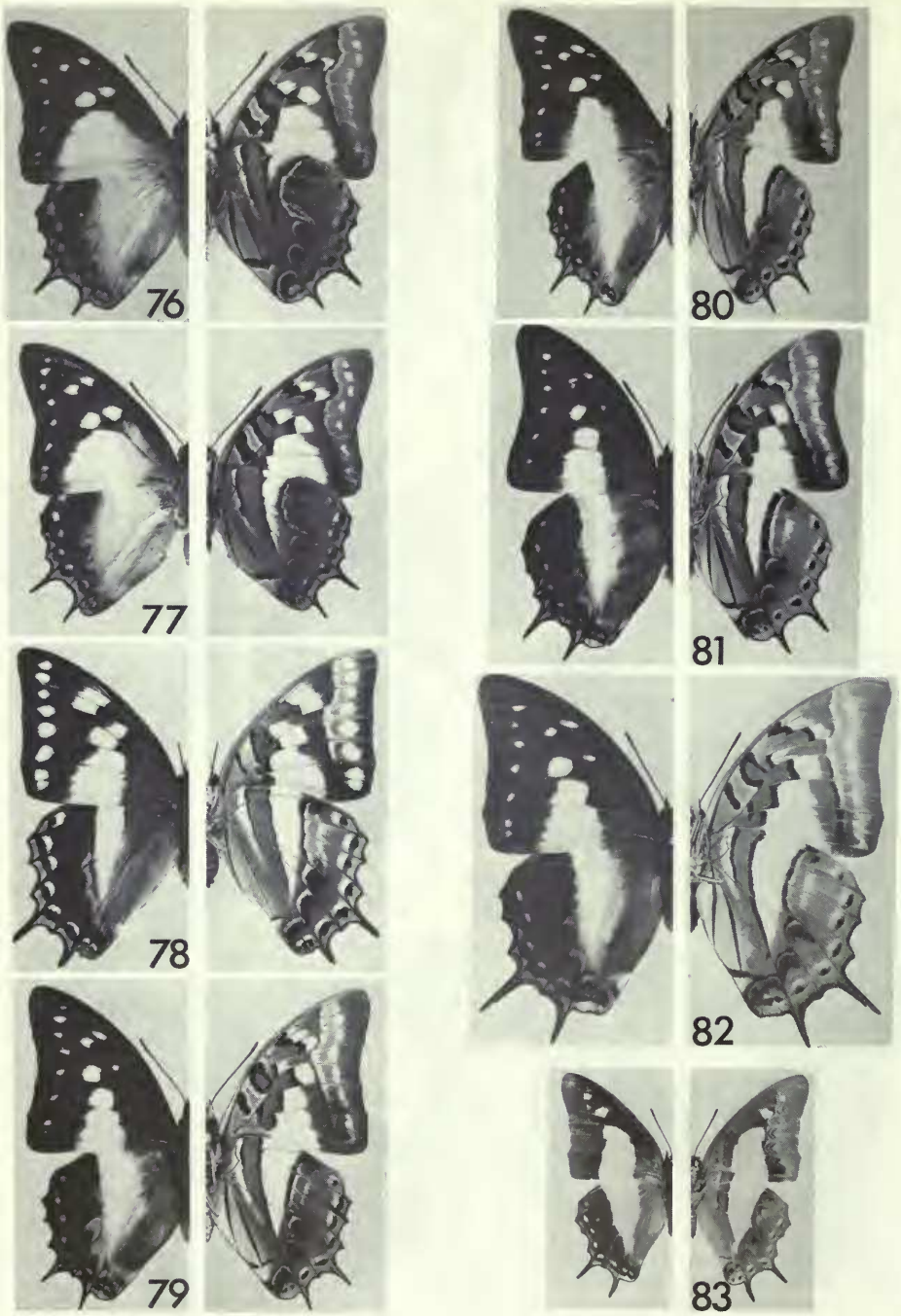
Figs 37–52 *Polyura* species, uppersides. 37–39, *P. hebe* (Butler). (37) *hebe* (Butler), ♂ (Sumatra, Propoe); (38) *lombokianus* (Fruhstorfer), ♂ (Lombok, Sewela); (39) *quaesita* Corbet ♂ holotype (Sipora I.). 40, 41, *P. moori* (Distant). (40) *moori* (Distant), ♂ (W. Sumatra); (41) *kaba* (Kheil), ♂ (Nias, [Hili Madjedja]). 42, *P. posidonius* (Leech), ♂ (China, Pa-Wo-Lung). 43, *P. cognata* (Snellen van Vollenhoven), ♂ (Sulawesi, Tondano, Minahasa). 44, 45, *P. schreiber* (Godart). (44) *tisamenus* (Fruhstorfer), ♂ (West Malaysia, Kinta); (45) *niasicus* (Butler), ♂ (Nias, [Kalim Bungo]). 46–48, *P. eudamippus* (Doubleday). (46) *eudamippus* (Doubleday), ♂ (India, Sikkim); (47) *rothschildi* (Leech), ♂ (China, K'ang-Ting); (48) *formosanus* (Rothschild), ♂ (Taiwan-Pu-li). 49, *P. delphis concha* (Snellen van Vollenhoven), ♂ (Sumatra, Gajo Mts). 50, *P. narcaea narcaea* (Hewitson), ♂ (China, Wa-ssu-Kou). 51, *P. nepenthes nepenthes* (Grose-Smith), ♂ (China, Sichuan). 52, *P. dolon dolon* (Westwood), ♂ (Nepal, Katmandu).



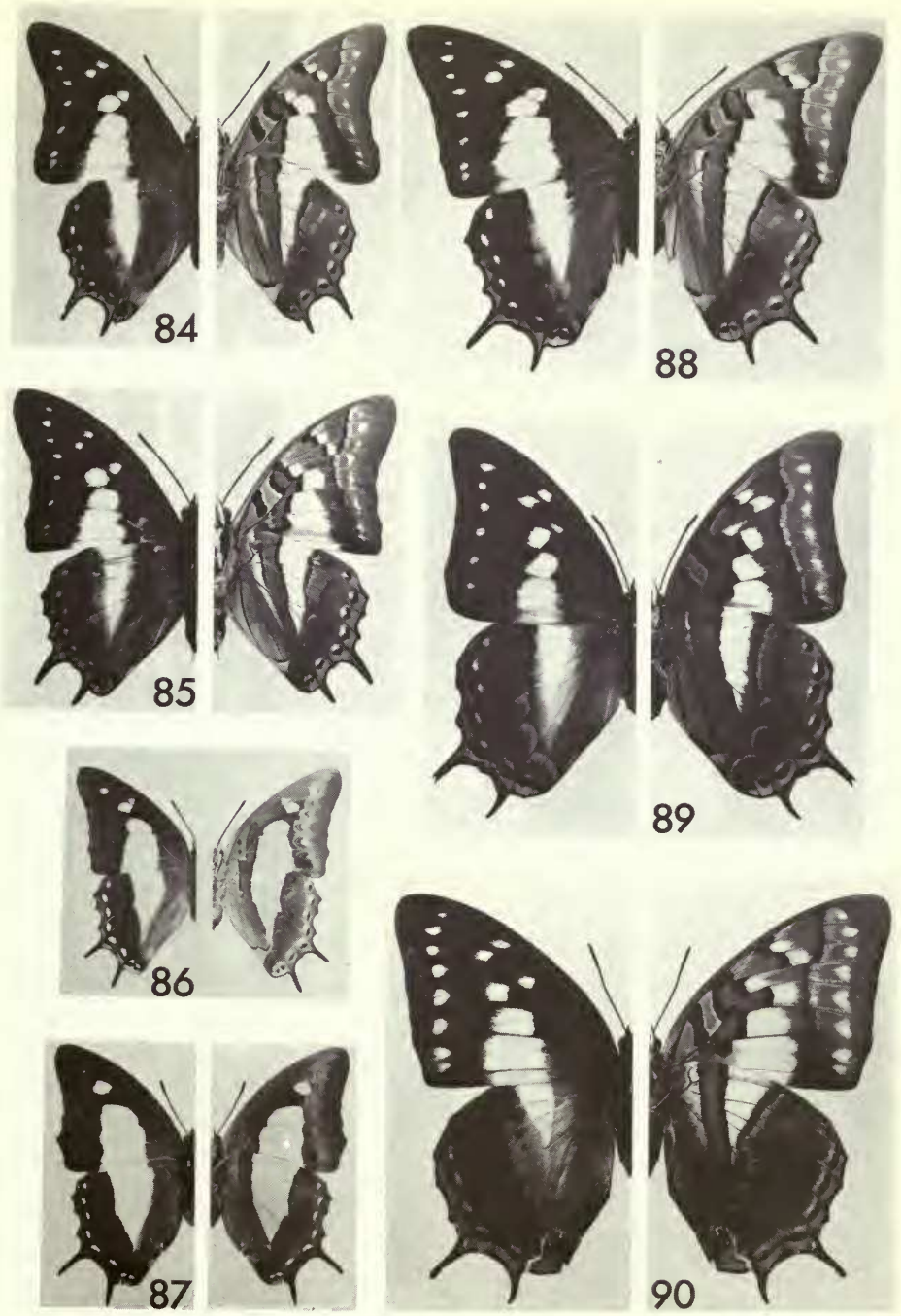
Figs 53–68 *Polyura* species, undersides. 53–55, *P. hebe* (Butler). (53) *hebe* (Butler), ♂ (Sumatra, Propoe); (54) *lombokianus* (Fruhstorfer), ♂ (Lombok, Sewela); (55) *quaesita* Corbet, ♂ holotype (Sipora I.). 56, 57, *P. moori* (Distant). (56) *moori* (Distant), ♂ (W. Sumatra); (57) *kaba* (Kheil), ♂ (Nias, [Hili Madjedja]). 58, *P. posidonius* (Leech), ♂ (China, Pa-Wo-Lung). 59, *P. cognata* (Snellen van Vollenhoven) ♂ (Sulawesi, Tondano, Minahasa). 60, 61, *P. schreiber* (Godart). (60) *tisamenus* (Fruhstorfer), ♂ (West Malaysia, Kinta); (61) *niasicus* (Butler), ♂ (Nias, [Kalim Bungo]). 62–64, *P. eudamippus* (Doubleday). (62) *eudamippus* (Doubleday), ♂ (India, Sikkim); (63) *rothschildi* (Leech), ♂ (China, K'ang-Ting); (64) *formosanus* (Rothschild), ♂ (Taiwan, Pu-li). 65, *P. delphis concha* (Snellen van Vollenhoven), ♂ (Sumatra, Gajo Mts). 66, *P. narcaea narcaea* (Hewitson), ♂ (China, Wa-ssu-Kou). 67, *P. nepenthes nepenthes* (Grose-Smith), ♂ (China, Szechwan). 68, *P. dolon dolon* (Westwood), ♂ (Nepal, Katmandu).



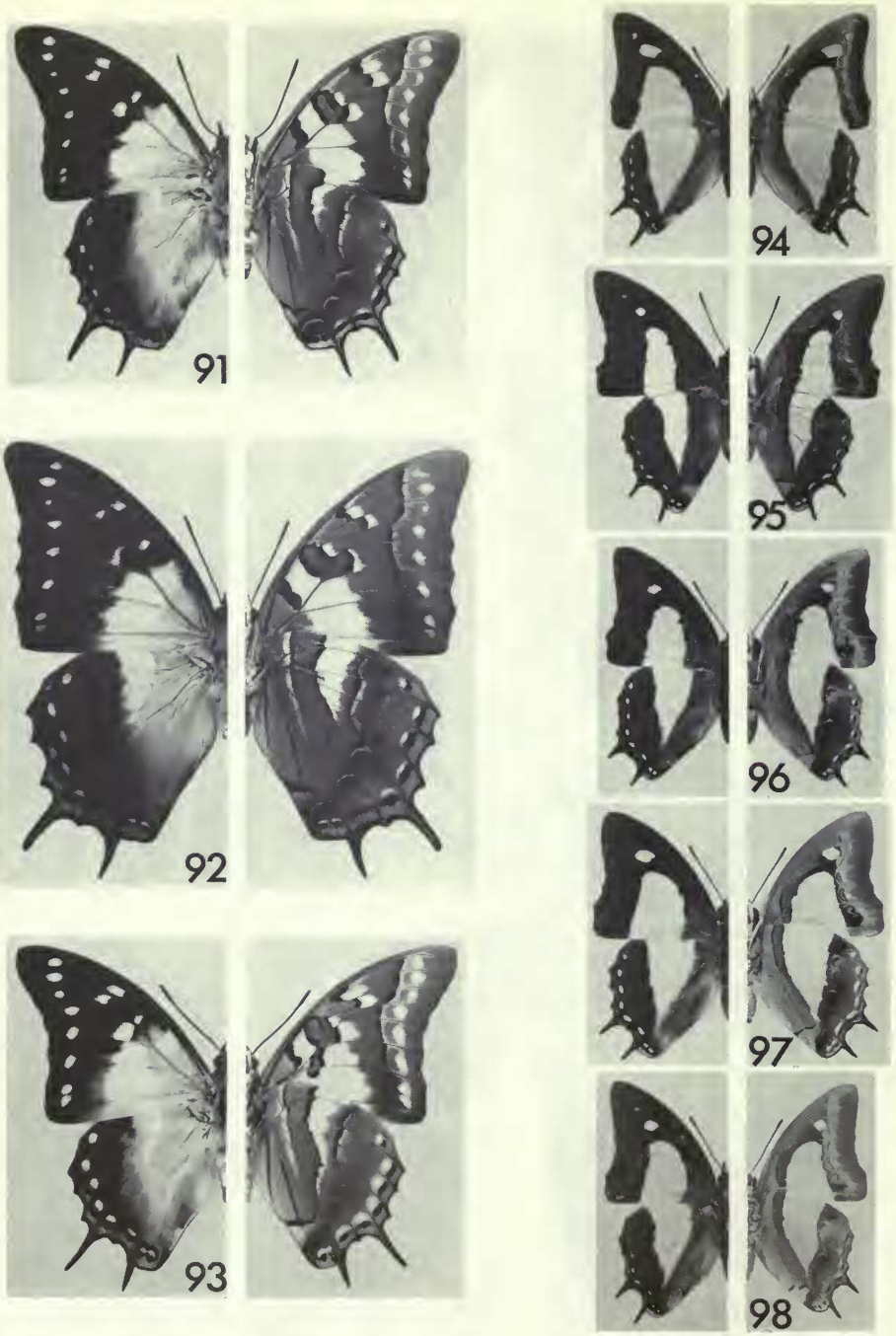
Figs 69–75 *Polyura* species, upper- and undersides. 69, 70, *P. gamma* (Lathy). (69) ♂ (New Caledonia); (70) ♀ (New Caledonia). 71, *P. caphontis caphontis* (Hewitson), ♂ (Fiji, Viti Levu I., Tamavua). 72, *P. caphontis nambavatua* subsp. n., ♀ paratype (Fiji, Vanua Mbalavu I., Nambavatu). 73, 74, *P. pyrrhus* (Linnaeus). (73) *pyrrhus* (Linnaeus), ♀ (Ambon); (74) *bandanus* (Rothschild), ♀ (Gr. Banda I.). 75, *P. gilolensis gilolensis* (Butler), ♀ (Batjan).



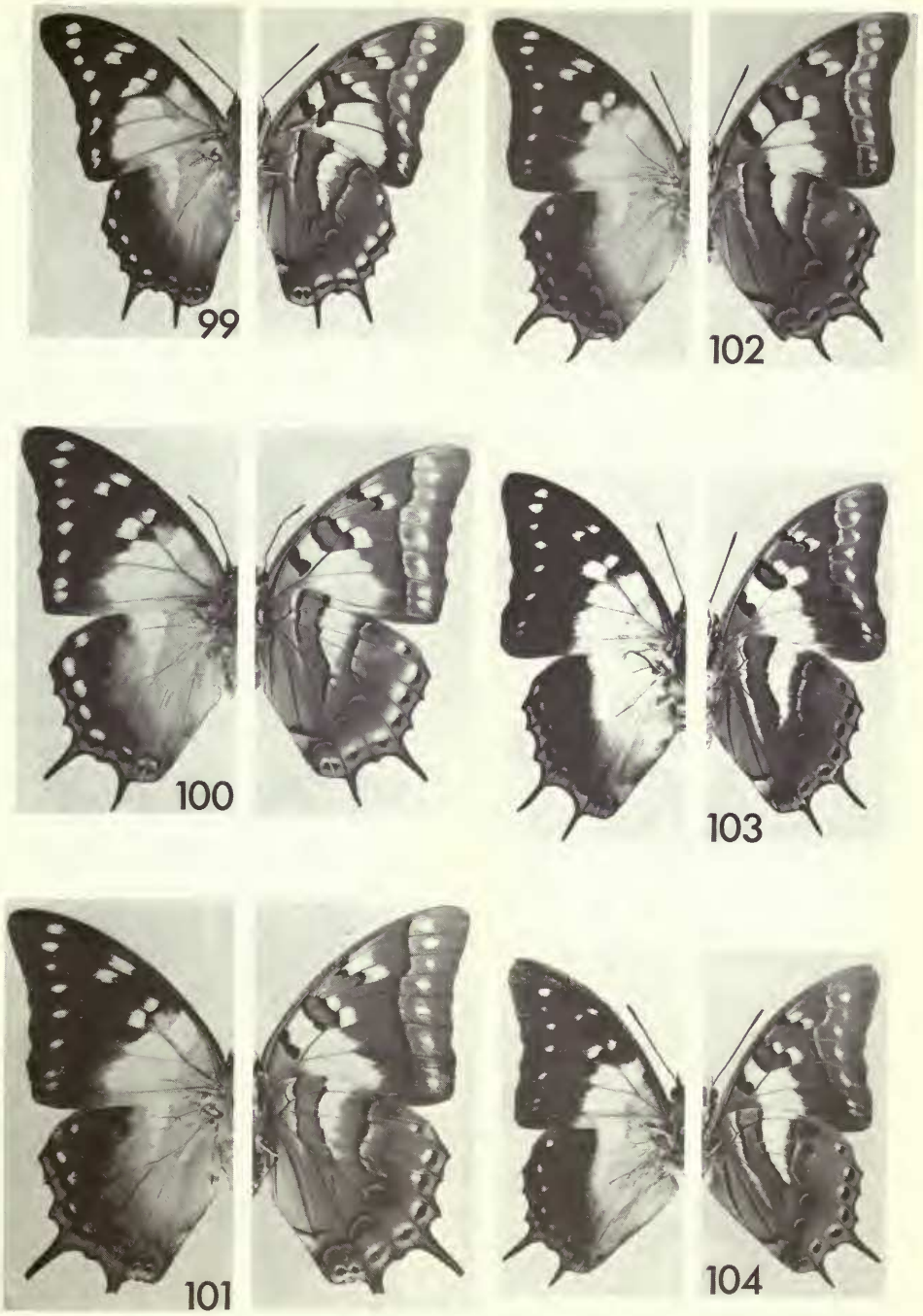
Figs 76–83 *Polyura* species, upper- and undersides. 76, 77, *P. gilolensis* (Butler). (76) *obiensis* (Rothschild), ♂ (Obi); (77) *buruanus* (Rothschild), ♂ lectotype (Buru). 78, *P. sacco* Smart ♀ (Vanuatu, Tanna I.). 79–82, *P. jupiter* (Butler). (79) *jupiter* (Butler), ♂ (New Ireland); (80) *jupiter* (Butler), ♂ (Milne Bay); (81) ♂ (Seram, Manusela); (82) *glauca* (Joicey & Talbot), ♀ lectotype (Biak). 83, *P. agraria fruhstorferi* (Röber), ♀ holotype (Java).



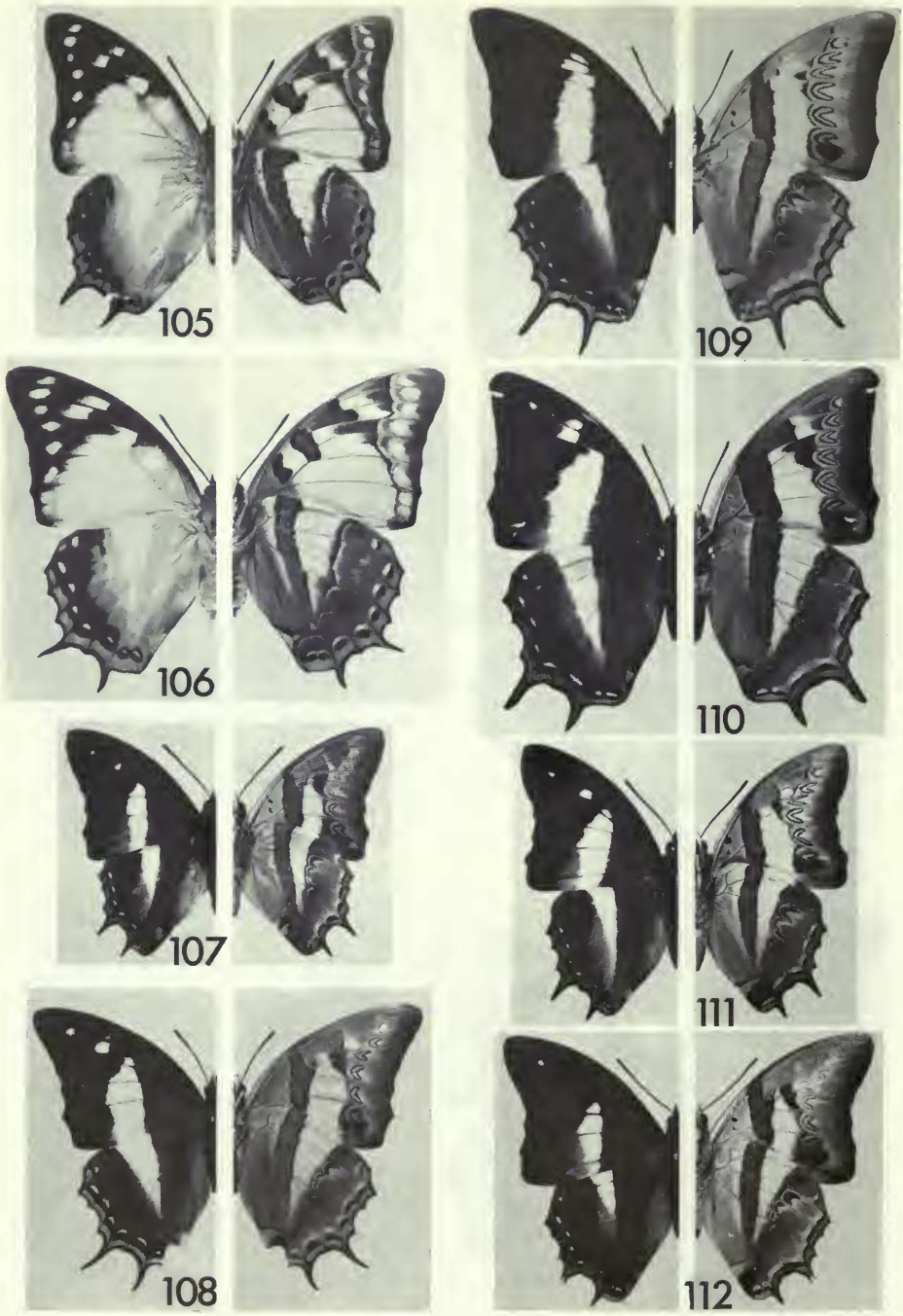
Figs 84–90 *Polyura* species, upper- and undersides. 84, 85, *P. jupiter* (Butler). (84) *keianus* (Rothschild), ♂ (Ewab Is., Kai Ketjil); (85) *watubela* (Rothschild), ♂ holotype (Watubela Is., Kissui). 86, *P. agraria sumbaensis* (Swinhoe), ♀ (Bali, Buleleng district). 87, *P. athamas athamas* [f. *athamas*] (Drury), ♀ (Sri Lanka, Kandy). 88–90, *P. jupiter* (Butler). (88) *keianus* (Rothschild), ♀ (Ewab Is., Kai Ketjil); (89) *admiralitatis* (Rothschild), ♀ paralectotype (Admiralty Is., Manus); (90) *attila* (Grose-Smith), ♀ (Solomon Is., Ranongga).



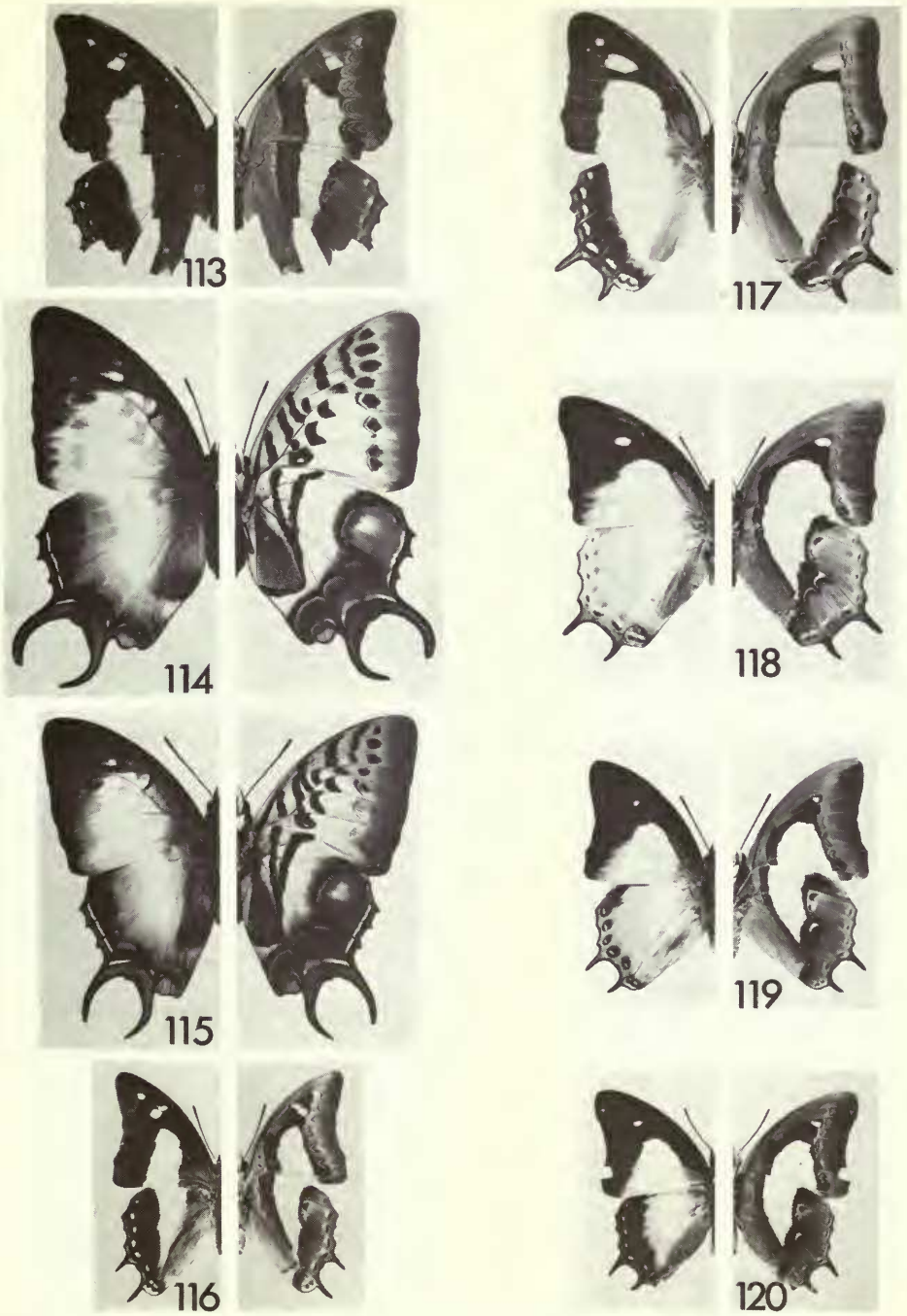
Figs 91–98 *Polyura* species, upper- and undersides. 91–93, *P. galaxia* (Butler). (91) *galaxia* (Butler), ♂ (Timor, Dili); (92) *galaxia* (Butler), ♀ (Timor); (93) *jovis* (Staudinger), ♂ lectotype (Sumbawa). 94–98, *P. athamas* (Drury). (94) *athamas* [f. *hamasta*] (Moore), ♂ (India, Darjeeling); (95) *andamanicus* (Fruhstorfer), ♂ (Andaman Is.); (96) *uraeus* (Rothschild), ♂ (Sumatra, Kerintji Valley); (97) *palawanicus* (Rothschild), ♂ lectotype (South Palawan); (98) *attalus* [f. *phrixus*] (Röber), ♂ (Java, Sukabumi).



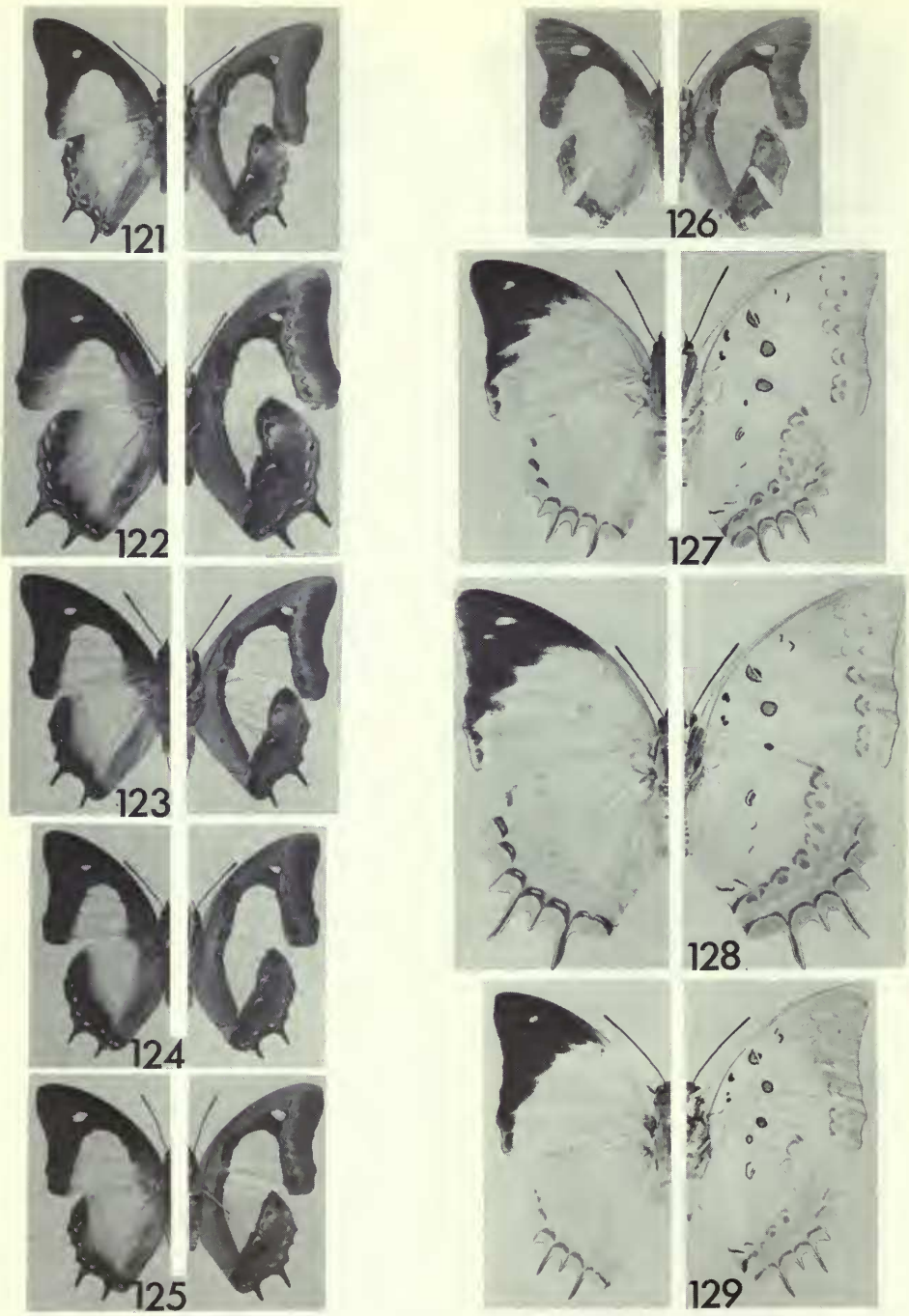
Figs 99–104 *Polyura galaxia* (Butler), upper- and undersides. 99, *scipio* (Rothschild), ♂ (Sumba, Waingapu). 100, *kalaonicus* (Rothschild), ♀ lectotype (Kalao). 101, *aloranus* (Rothschild), ♀ holotype (Alor). 102, *lettianus* (Rothschild), ♀ (Leti). 103, *antigonus* (Fruhstorfer), ♂ paralectotype (Damar). 104, *babbericus* (Fruhstorfer), ♂ (Babar).



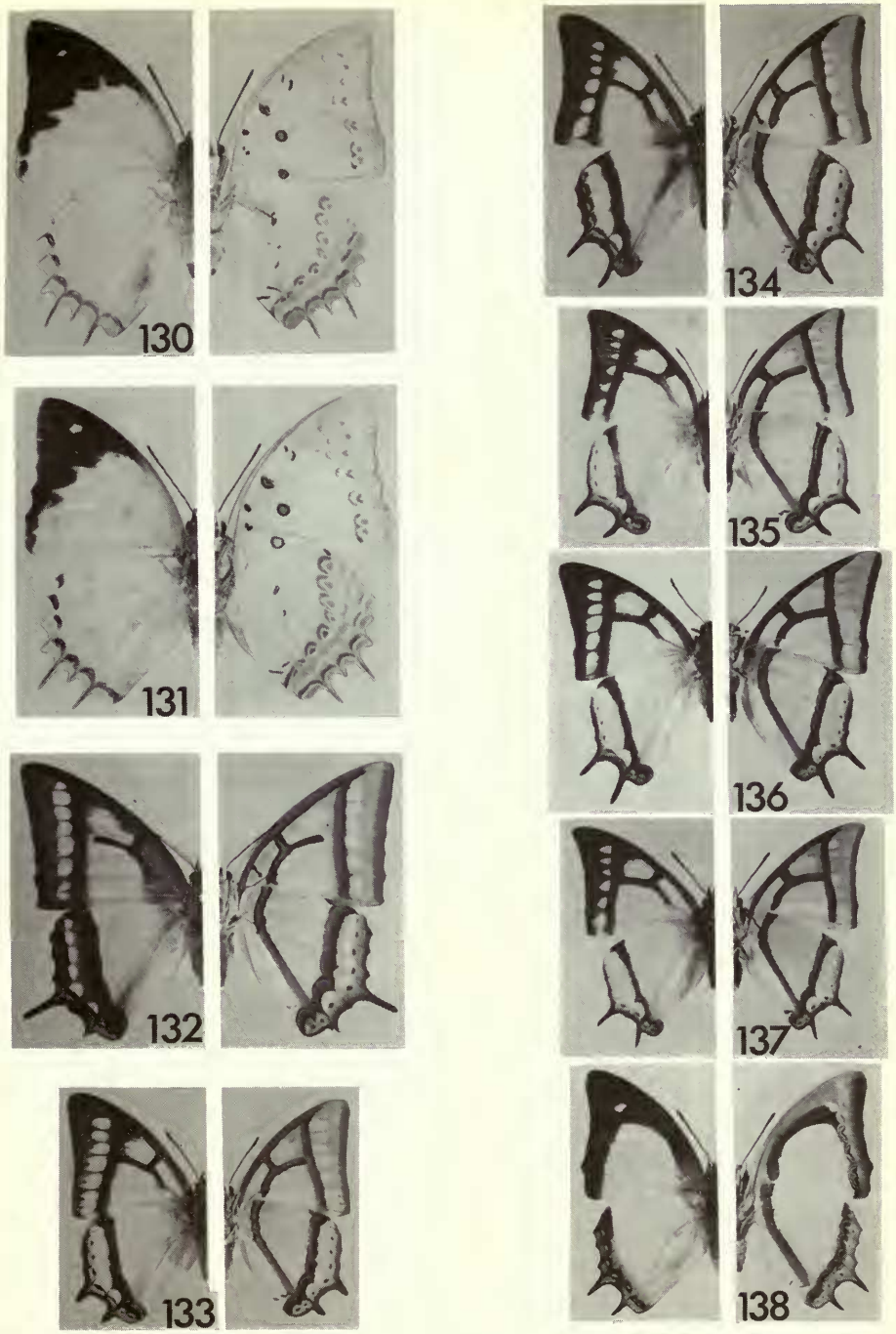
Figs 105–112 *Polyura* species, upper- and undersides. 105, 106, *P. sempronius sempronius* (Fabricius). (105) ♂ (New South Wales); (106) ♀ (Queensland, Dawson Distr.). 107–112, *P. schreiber* (Godart). (107) *schreiber* (Godart), ♂ (Java, Bogor); (108) *schreiber* (Godart), ♀ (Java, Mt Gede); (109) *wardii* (Moore), ♀ (India, N. Kanara, Karwar); (110) ♀ (Andaman Is., Port Blair); (111) *assamensis* (Rothschild), ♂ paratype (India, Assam, Jaintia Hills); (112) *malayicus* (Rothschild), ♂ (Sabah, Labuan).



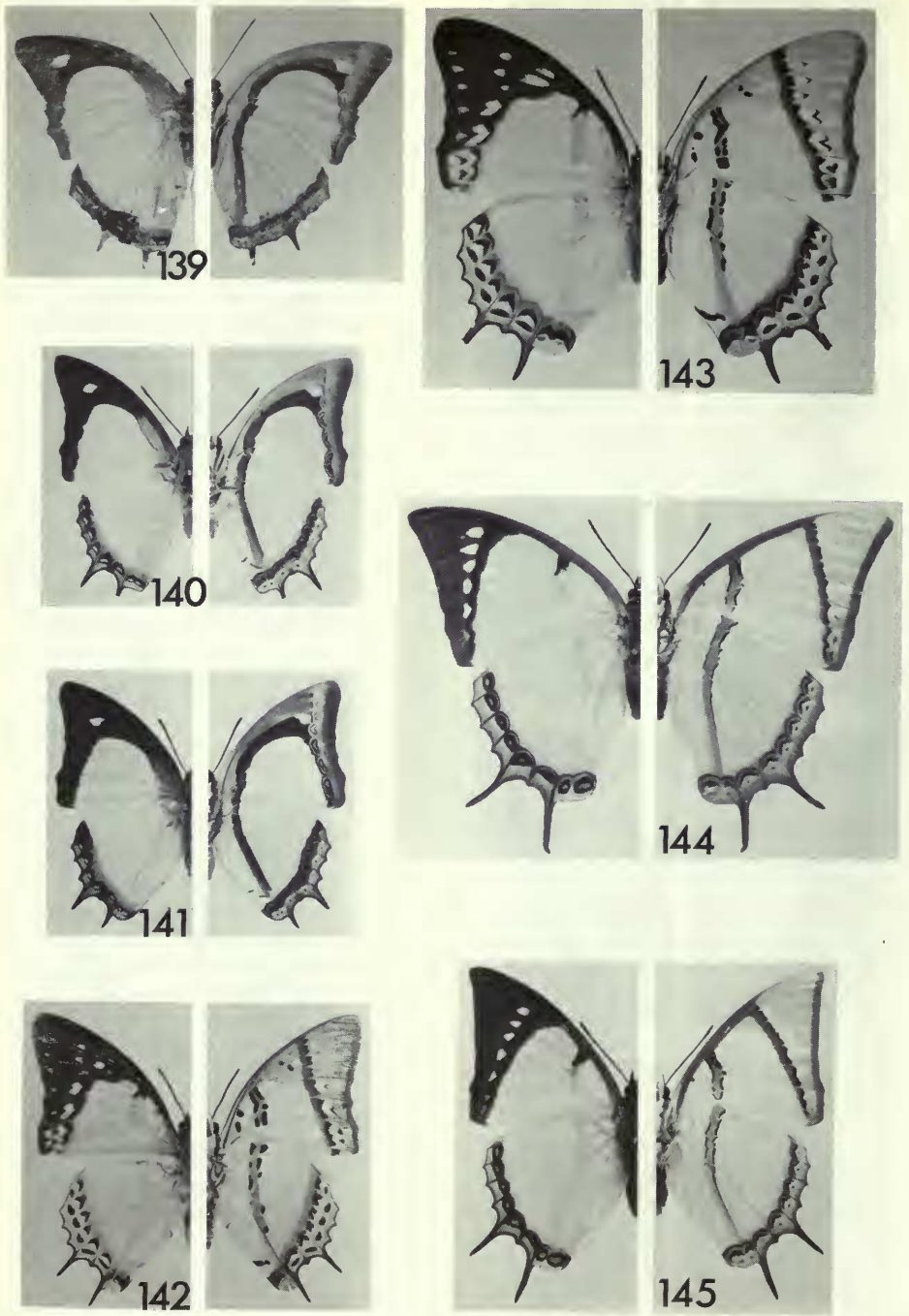
Figs 113–120 *Polyura* species, upper- and undersides. 113, *P. schreiber bilarensis* Jumalon, ♀ (Bohol, Bilar). 114, 115, *P. dehanii* (Westwood). (114) *dehanii* (Westwood), ♀ (Java, Sukabumi); (115) *sulthan* (Hagen), ♂ (Sumatra, [Bng. Proepoe, Pad. Bovenland]). 116, *P. agraria alphius* (Staudinger), ♂ (Timor). 117, *P. arja* (Felder & Felder), ♀ (India, Khasi Hills). 118–120, *P. hebe* (Butler). (118) *hebe* (Butler) ♀ (Sumatra, Sibolga); (119) *chersonesus* (Fruhstorfer), ♂ (West Malaysia, Perak, Kinta); (120) *plautus* (Fruhstorfer), ♂ lectotype (Singapore).



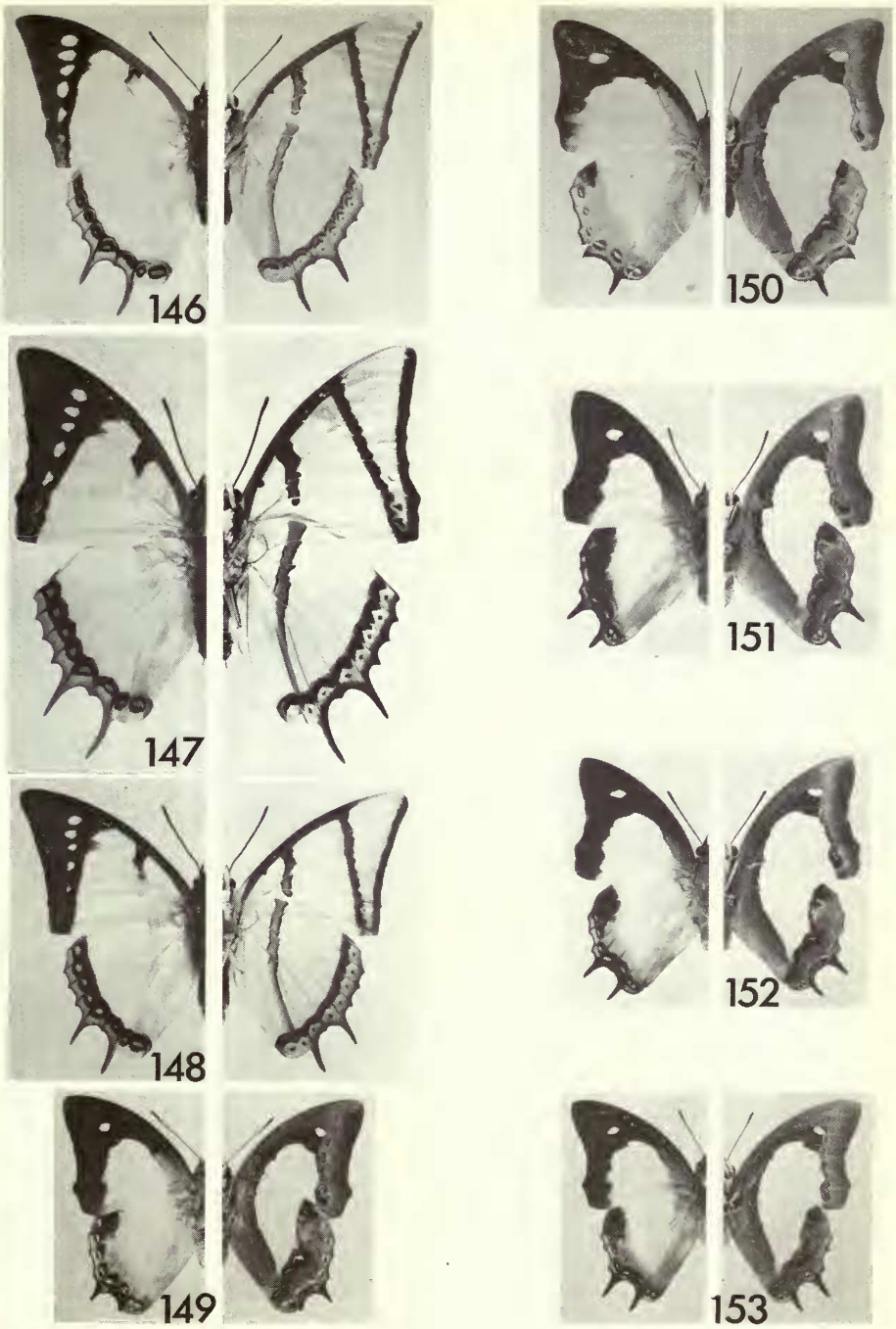
Figs 121–129 *Polyura* species, upper- and undersides. 121–126, *P. hebe* (Butler). (121) *fallacides* (Fruhstorfer), ♂ (Nias, Lahagu); (122) *ganymedes* (Staudinger), ♂ (Sabah, Mt Kinabalu); (123) *fallax* (Röber), ♂ (Java, Sukabumi); (124) *nikias* (Fruhstorfer), ♂ (Bali); (125) *kangeanus* (Fruhstorfer), ♂ (Kangean Is.); (126) *baweanicus* (Fruhstorfer), ♂ holotype (Bawean). 127–129, *P. delphis* (Doubleday). (127) *delphis* (Doubleday), ♂ (India, Manipur, [Lengba R.]); (128) *delphis* (Doubleday), ♀ (Burma, Thandaung); (129) *othonis* (Fruhstorfer), ♂ (Nias, [Lalfago]).



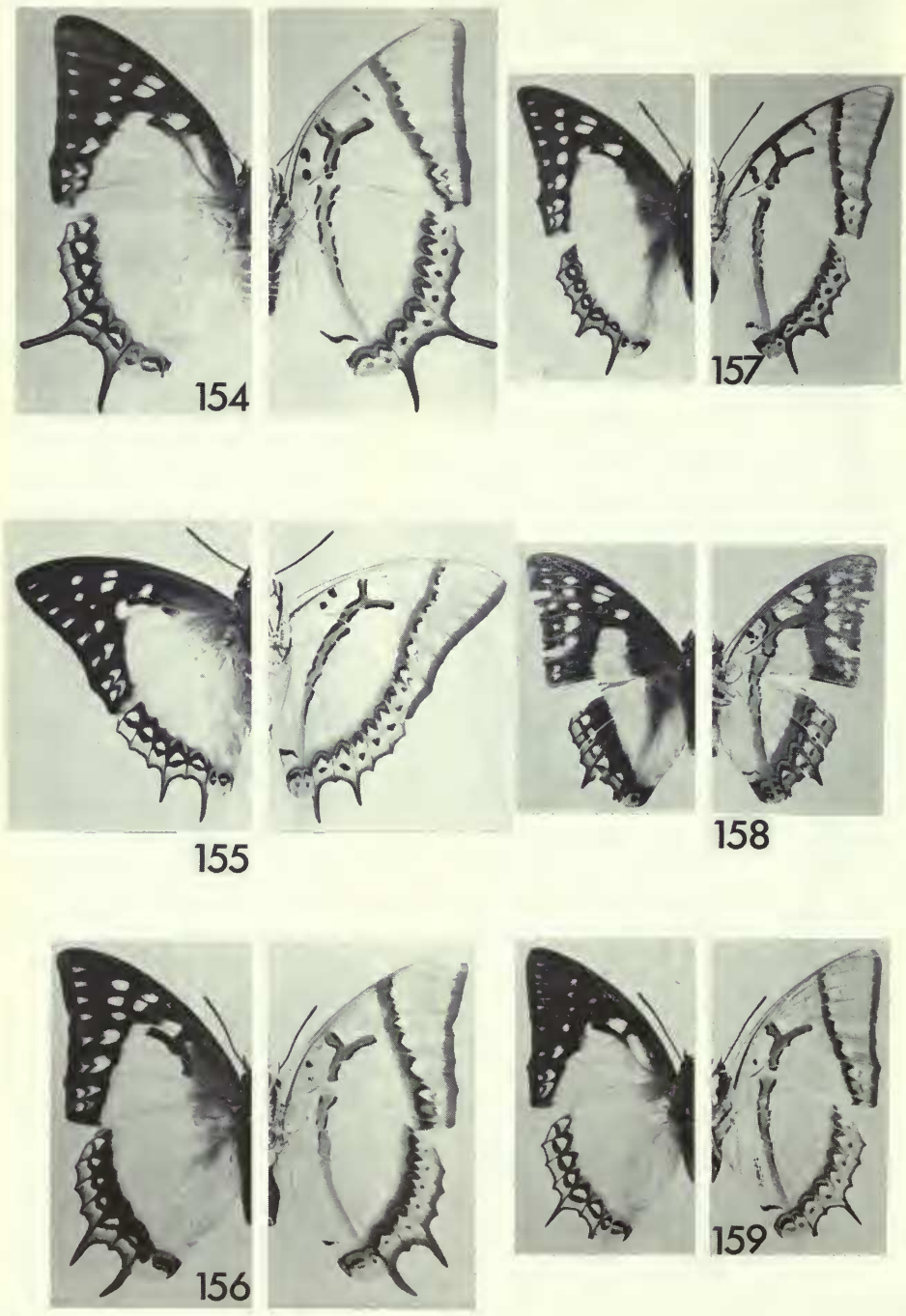
Figs 130–138 *Polyura* species, upper- and undersides. 130, 131, *P. delphis* (Doubleday). (130) *cygnus* (Rothschild), ♂ (Java), Mt Halimun); (131) *nivea* (Rothschild), ♂ (Palawan). 132–137, *P. narcaea* (Hewitson), (132) *narcaea* (Hewitson), ♀ (China, Chiu-chiang); (133) *menedemus* (Oberthür), ♂ (China, [Lou-tse-Kiang]); (134) *meghaduta* (Fruhstorfer), ♂ (Taiwan); (135) *aborica* (Evans), ♂ lectotype (India, Assam, Abor); (136) *thawgawa* (Tytler), ♂ (Vietnam, Tongking, [Ngai-Tio]); (137) *lissainei* (Tytler), ♂ (India, Naga Hills, [Jakama]). 138, *P. jalysus jalysus* (Felder & Felder), ♂ (Sumatra, [Kandg. Ampat, Pad. Benedenl]).



Figs 139–145 *Polyura* species, upper- and undersides. 139–141, *P. jalysus* (Felder & Felder). (139) *jalysus* (Felder & Felder), ♀ paralectotype (West Malaysia); (140) *ephebus* (Fruhstorfer), ♂ (Burma, Karen Hills, [Chataip]); (141) *triphonus* (Fruhstorfer), ♂ paralectotype (North Borneo). 142, 143, *P. nepenthes* (Grose-Smith). (142) *kiangsiensis* (Rousseau-Decelle), ♂ (China, S. Zhejiang, Pihu); (143) *nepenthes* (Grose-Smith), ♀ (no locality). 144, 145, *P. dolon* (Westwood), ♀ (India, Naini Tal); (145) *centralis* (Rothschild), ♂ holotype (India, Sikkim).



Figs 146–153 *Polyura* species, upper- and undersides. 146–148, *P. dolon* (Westwood). (146) *magniplaga* (Fruhstorfer), ♂ (India, Shillong); (147) *grandis* (Rothschild), ♂ (Burma, S. Shan State, Kalaw); (148) *carolus* (Fruhstorfer), ♂ lectotype (China, Siao-Lou). 149–153. *P. moori* (Distant). (149) *saida* (Preyer & Cator), ♂ (Sabah, Mt Kinabalu); (150) *moori* (Distant), ♀ (West Malaysia); (151) *sandakanus* [f. *marginalis*] (Rothschild), ♂ holotype (India, Naga Hills); (152) *javanus* (Röber), ♂ (Java, [Palabuan]), (153) *chalazias* (Fruhstorfer), ♂ (Bali).



Figs 154–159 *Polyura eudamippus* (Doubleday), upper- and undersides. 154, *eudamippus* (Doubleday), ♀ (India, Margherita). 155, *nigrobasalis* (Lathy), ♂ (Burma, Dawna Range). 156, *cupidinius* (Fruhstorfer), ♂ (China, Yunnan, [Bahand]). 157, *whiteheadi* (Crowley), ♂ lectotype (Hainan). 158, *weismanni* (Fritze), ♂ (Okinawa). 159, *peninsularis* (Pendlebury), ♂ (West Malaysia, South Perak, Gunong Jasar).

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Invalid names are in *italics*; principal references are in **bold**.